NEXT GENERATION

The **future** of **interactive** entertainment   Premiere issue

The looming
videogame wars
of **1995**

volume one

01

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Virtue Fighter 2, state of the art in arcade action and Sega Japan's flagship title, due for US release in early 1995. Sega's AM2 board delivers 300,000 texture-mapped polygons, 60 frames per second. See page 83

The golden age of 16bit is over.
As nine new cutting-edge systems
prepare for war, **NEXT Generation**
reports from the field...

Sony PlayStation
As PS-X launches in Japan,
Sony's plan for videogame
domination is revealed

3DO
It's here. It's now. And 3DO
finally has some killer
games. But is it enough?

Sega Saturn
Based on arcade hardware,
Sega's 32bit system talks
big. But can it deliver?

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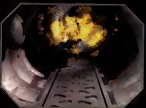- Written by the best in the business

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CREATURE SHOCK

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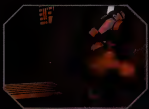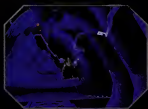
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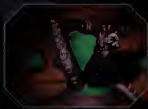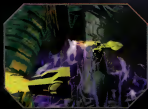
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Or is it one of those really ugly things that we don't even want to mention?

CREATURE SHOCK

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PC CD-ROM

ARGONAUT   Virgin

NEXT GENERATION

GENERATION

14

GLINT

3Dlabs

News
Sega 32X success at the cost of Saturn! • SNK's Neo-Geo CD unveiled • Tokyo's Jamma Show report • Nintendo's VR32 'Virtual Boy' • 3DO faces developer unrest • And plenty more...

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Alphas
Previews of works-in-progress games around the globe featuring Virtua Fighter and Daytona USA (Saturn), Ridge Racer (PlayStation), Fight For Life (Jaguar), and eight more blockbusters

90

Player4   4   Mike

Ratings: 63 game reviews
An essential monthly review of all the best games on all the latest systems. 3DO, Jaguar, 32X, CD-i, PC, CD-ROM, Genesis, SNES, Sega CD and Neo-Geo software reviewed and rated

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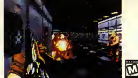
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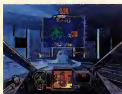
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There was always going to be a window of opportunity: Sega and Nintendo would profitably milk the 16bit market long after a small but significant number of gamers demanded better. And right now, these early adopters have only 3DO to turn to. But as the Japanese console giants circle for the kill, the window is closing fast. So **NEXT Generation** asks Trip Hawkins ...

Is it **Now** or **Never** for **3DO?**

After a shaky start, 3DO is arguably the hottest games machine in the US right now. The current price for a 3DO unit is realistic at $399, *FIFA International Soccer* and *Road Rash* offer state-of-the-art gameplay...

And there's still no serious competition.

But this will change. As **NEXT Generation** goes to press, Sony's PlayStation and Sega's Saturn are launching in Japan. Nintendo's Ultra 64, while still in development, promises revolutionary power. Add to the confusion a glut of alternative systems from Atari, SNK, NEC, Commodore and Philips, and it's easy to see that 1995 will witness the most bloody format wars of all time.

And if 3DO is to survive — if Trip Hawkins'

dream is to become reality — then it needs to make maximum advantage of its head start. It needs to establish itself now. Many games developers are looking at 3DO's sales this holiday season before deciding whether to continue further development, and machines live or die by such decisions. Which means that Trip Hawkins has to convince you to buy a 3DO system today...

A golden opportunity?

NG: So — in the holiday season of 1994 and the start of 1995 — is everything in place for 3DO?

Trip: Absolutely.

NG: What's missing from this 'golden opportunity'?

Trip: The only thing that always takes time is awareness. Someone once told me that market researches had determined the growth rate for new products was very similar to the growth race of the bubonic plague: for consumers to really understand something they have to find out all about it from someone else. Other than this, I don't think anything is missing as such.

NG: So 3DO must strike while the iron is hot. Never again will 3DO have the 'next generation' market so much to itself. How many machines must 3DO sell this holiday season to capitalize on this head start and make 3DO a system that third party games developers can't afford to ignore?

Trip: It's not the absolute hardware numbers that matter, it's how much software is going to be consumed. For, say, a machine like the Sega Genesis, by the time the installed hardware base got to half a million, software sales were at 2 million per year. Well, we've already gotten to 2 million software sales in less than a year and with a worldwide installed base of 200,000. So one of the things this says about 3DO is that the software is better, the users are buying more software and so economically it's going to be a more attractive business on a smaller installed base than a cartridge machine. Plus, the margin structure is so much more profitable because CDs are so much cheaper to manufacture than cartridges.

NG: But even with a software-hungry audience, you still have to sell a sufficient number of units.

Trip: I don't think there's a magic number for sales this Christmas. I think that the astute software companies realize that the profit is already there. We have 13 titles already that have done over $0,000 units — and that's a benchmark that a lot of companies will look at; $0,000 sales of a CD-ROM title is around $1.5 million revenue for a software house, and if I spend half of that on my development budget and then some on marketing it, I'm already making a good profit.

NG: How much is the Japanese market subsidizing a poorer US installed base?

Trip: The Japanese market got off to a faster start and the presence of this market is very attractive to software developers. Matsushita and Sanyo are both trying to do software distribution and they will now step in and make sufficient purchase orders

Panasonic's original 3DO player — now just $399, is probably the biggest bang for the gaming buck available to US gamers. For the moment at least...

we start making money and can continue indefinitely.

NG: But the current market conditions won't remain indefinitely. In 1995, nine new systems will enter the marketplace. Store shelves — for example — only have room for so many products, there can't be room for everybody...

Trip: You can say that, but the amount of space that can justifiably be devoted to 16bit cartridge products a year from now will be a lot less than it has been in the last few years. Retailers need new products to fill this gap. I look at it like this: If a customer bought

for a very large number of units. It's very typical in Japan that a piece of software will get an upfront order of anything from 25,000 to 60,000 units. Combine this with the sales potential of the US and the economics become very attractive.

NG: So you don't feel there is anything to prove to the software development community in terms of sales numbers this holiday season. Personally, how many 3DO units do you want to sell?

Trip: Over a longer period of time I'm looking at a target of 2 million. When we get our installed base up to that size it means we will make it as a company. Right now we are losing money, we have to get our installed base up to that size before
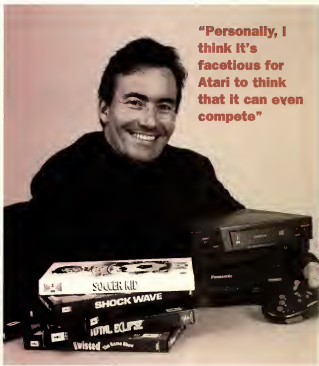
> "Personally, I think it's facetious for Atari to think that it can even compete"

talking

Saaya's 3DO system, is currently available only in Japan, but expect a US launch later in 1996. The hi-fi styling is indicative of Japan's multimedia ambitions

16bit machine, how many years is it until they've done everything they can do with it? Let's just say it's three years. Well, last year there was only half a million people like that, at the end of this year there will be 5 million people in that situation. Next year, there will be 15 million.

NG: Sure, this evolution is inevitable. Hence, there was always going to be a window of opportunity for 3DO. Sega and Nintendo would probably continue with the 16bit market long after a small but significant percentage of gamers demanded something better — these people are your target audience right now.

But a year from now, this demand will be big enough to attract the big boys. 3DO will be fighting nose-to-nose with Sega, Nintendo and Sony. Surely, the market can't support four multimillion dollar platforms (we are even ignoring 32X, CD-i and Jaguar) in 1995. Someone has to fail, right?

Trip: The home computer market — typically — has supported at least that many formats. If you look at the 1980s you had home machines in the US ranging from the Apple II, to the Commodore 64, the Nintendo, the IBM PC, the Macintosh... There's always been a fairly high level of confusion that has gone on since the industry began. It's unfortunate, it's too bad, but generally the market has supported a lot of different machines.

Trashing the competition...

NG: So what (albeit partisan) advice would you give to people considering buying a rival games system to the 3DO?

Trip: I think customers who are buying the CD-i product probably aren't game players because anybody who plays knows that games are not the CD-i's forte. Aside from that, philosophically, there is a lot in common between CD-i and 3DO in that they are the only two products on the market that support MPEG expansion (video-CD capabilities) and they are the only products that support all the optical disk format standards including Kodak and Photo-CD. So, if you're looking for versatility, you're probably looking at CD-i and 3DO. And if they are game players, then they should pick 3DO.

NG: How about Jaguar?

Trip: We believe that to be a real competitor in this market, you've got to have about $500 million in capital. Now, the 3DO company has more than $100 million, and then we have Matsushita, our other hardware partners, and then all of our software partners and all of these companies together are making this kind of investment.

Atari really doesn't have any partners, they don't have much money themselves. So I personally think it's facetious for them to think that they can even compete. This is

"we're all going to be dead matter in 100 years, so at some point you have to start enjoying your life"

a fairly basic business reality for them and you can see that over the past year — in fact, over the past several years — there's been a trail of broken promises to the marketplace. And frankly, what they say about the product is very misleading. They've gotten pretty far on pure smoke and mirrors but I think that after this Christmas the reality will be very clear to people.

NG: How about 32X?

Trip: Sega has a very large installed base. And any Sega Genesis customer who wants to spend a very small amount of money and get better gaming can do that with the 32X. The weakness is that it's not a viable long-term format; it's not compatible with Sega's next generation, and so basically it will be discarded within a year or two. And it will never be really heavily supported by third party software companies because they know that it will have a very short shelf life.

I thought Genesis was such a great product that I gave one for free to every Electronics Arts' employee. But 32X is just a stop gap. It's a financial event for Sega as a company. It's not a good product for consumers.

NG: What about people holding out for 1995's next generation Japanese consoles? How about Ultra 64 and Saturn?

Trip: A lot of insiders have a pretty strong feeling that Nintendo's Ultra 64 won't be in the market for '95. A lot of people who are pretty dialled-in to their R&D activities see it more as a product for the second quarter 1996. Nintendo just selected a RAM/bus memory architecture a couple of months ago (August), and it's going to take a long time to implement a machine using this architecture. OK, they've shown the coin-op hardware, but the home system is a lot different. The Saturn is a very troubled project. A lot of people don't believe it will ever be marketed outside of Japan — so these factors will make the market a lot less cluttered.

NG: So, your warning to someone who's looking for a new games machine, but also waiting for next year's new hardware systems, would be that the machines might not turn up on time...

Trip: Partly, but also it's inevitable that in every category of consumer electronics there will always be new models released, existing ones will become less expensive, and new features will be added. Any consumer of any type of technology product knows that if they wait, they can get something better and they can get something

cheaper. But we're all going to be dead matter in 100 years, so at some point you have to jump in and start enjoying your life.

NG: Fine, but then the flip side of this coin is that consumers also realize that what they buy could be out of date in a year...

Trip: Ordinarily, yes. But I think that philosophically 3DO has a very different approach from everyone else. In the whole history of videogame hardware, companies have asked consumers to throw everything away every few years and start over. They say the same things to developers and to retailers. We think customers should have true upgrade path to the next generation — not just peripherals to improve performance. And this next generation should be backward compatible so that all the software you already have will continue to be viable. This way, developers also get to build on what they already know. If they want to upscale projects to work on our M2 hardware, they use the same tools and the same skills, they've already made that investment and are already significantly on that learning curve.

M2, codename "Bulldog"

NG: Taking a look at Sega CD titles, or the ridiculous state of the PC Industry... doesn't the pursuit of backward compatibility simply anchor machines to the past and restrict performance?

Trip: Things can continue to evolve. For example, our operating system is already in its third generation, and each generation gets smaller (which frees up more memory for applications),

Goldstar's 3DO player is the second 3DO unit to launch in the US marketplace, soon to be joined by Creative Labs' accessory enabling PCs to play 3DO software

It's taken more than 150 releases to get it right. "In the US, the first releases weren't that great, just rehashed PC stuff" admits 3DO's Euro-boss Bob Faber

gets faster, and adds new features. The real issue is, how difficult is it to get your next generation hardware to perform like the older generation of hardware, and in our case — because of the level of technology — it's very easy to do that.

NG: Manufacturers of 3DO systems (such as GoldStar and Panasonic/Matsushita) have to make profit purely on hardware sales. But a company like Sega can take a loss on hardware because it knows it'll make a killing on the software. So how can 3DO possibly compete on pricing?

Trip: The business models are more similar than you might think. First of all, a company like Sony has to pay for all their own R&D, whereas 3DO is going to spend more than $100 million on technology development, and right there, that's a tremendous cost savings to each manufacturer who uses our technology.

Second thing is, a 3DO manufacturer shares the majority of the marketing burden with all the other 3DO companies, so this overhead is not as high, and that's another thing that has to be factored into your cost. A company like Sony has to do all its own software evangelism, but we do that with the 3DO format. The point is that the major hardware 3DO partners own a big chunk of the 3DO company so they are sharing in the royalty stream of 3DO, and they publish their own software. At the end of the day, there is really not that much difference.

NG: Scheduled for release next fall is M2. At the moment you're proposing a plug-in accessory for existing 3DO machines. Surely there has to be a stand-alone 3DO II planned?

Trip: There will be at some point.

NG: A new stand-alone machine will benefit from having had over a year to rethink the manufacture of the original 3DO system. How have your engineers managed to reduce the cost of manufacturing a 3DO?

Trip: The three biggest chips — that are all custom parts — have been combined into one which we call Anvil. And this chip is now available and most of our manufacturing partners will be switching over to production of the use of Anvil in the early part of 1995.

NG: This has to make a cheaper 3DO II a big possibility. Will a new machine incorporate MPEG 1 or MPEG 2 video hardware?

Trip: We'll continue to support both. But right now we're not ready to talk about the details of how we are going to implement it.

NG: So tell us about the heart of M2...

Trip: M2 basically has two key chips in it. There is a PowerPC chip that was custom designed by IBM and Motorola to fit in our 3DO architecture perfectly. And then the other chip is the Custom ASIC. This chip will do most of the other processing for graphics and audio and video.

NG: Why chose PowerPC technology to be such a key part of 3DO's future?

Trip: IBM has a superior proprietary semiconductor process, and both IBM and Motorola have the capability for multiple design teams and multiple processors in their family, so you have a lot of scalability when you need to move up to higher performance. And since Apple and IBM are using the PowerPC, that will drive the cost down so you're not just depending on 3DO hardware sales to reduce costs.

NG: And how will this change gameplaying on the 3DO?

Trip: One consequence is improved polygon rendering. We thought that in a 1995 time frame most of the existing genres in software are basically 2D backgrounds, 2D foregrounds, or a 3D background with a 2D foreground.

Trip: Right, so 3DO can do all the existing genres. But the one area that's like a new paradigm is 3D background with a 3D foreground using 3D polygon rendering for the characters themselves (such as Daytona USA) — and you need tremendously high polygon performance to achieve that.

Now you look at something like Virtua Fighter — which is at this point the only title

of its kind where the fighters look like origami, and that machine is a pretty hot piece of hardware. That machine will do something like almost 200,000 polygons per second, but clearly it's not good enough. We want to make a quantum leap that really delivers this power to generate over one million polygons per second. And that's what we've done.

NG: But numbers don't always tell the whole story. So Trip — just to make this clear — you're saying that a 3DO with M2 will be able to run *Virtua Fighter* — as it is in the arcade — without breaking a sweat?

Trip: Certainly from the standpoint of computing it's at a much higher performance, from what I know. Of course, the difference with arcade machines is that they have a

The PowerPC chip: the heart and soul of 3DO's M2 accelerator, due late 1995

"the growth rate for new products is similar to the growth rate of the bubonic plague"

tremendous amount of ROM so that's one point to remember. But of course, as RAM prices come down, you'll get more and more RAM in home machines and eventually even in this difference will go away.

NG: Yes, in the future, perhaps. But in the meantime, the process of sucking data off a CD is notoriously slow...

Trip: Yeah, but there's a whole lot more RAM (12Mbits) in a 3DO than the amount of ROM that's in a typical videogame cartridge. So if you wanted to just load something in RAM and execute under RAM (as with titles *Demolition Man* and *Burning Soldier*), you can.

NG: How much will M2 cost?

Trip: We are not ready to talk about pricing, but it will be very aggressive.

NG: Because news of M2 and the next generation of 3DO hardware is out, won't that keep people from buying 3DO, knowing that in six months they'll need to invest again?

Trip: The way consumers behave is that when they are ready for something new, they get something new, and frankly, with our strategy they know they have a product line that they can grow with. It's not going to become obsolete.

But have you convinced the gamers?

NG: In the hype-tinted eyes of the gaming industry, 3DO was everyone's savior 18 months ago. It was dead and buried six months ago, but right now it's clawing back significant respect as a viable platform. On the street and in consumers' eyes, how is 3DO perceived?

Trip: I think that people who have actually seen the product are very impressed with it. I hear stories all the time from people who talk about how completely blown away their friends are when they see 3DO for the first time. And I have personally shown 3DO to a lot of adults, not just videogame fans, and they are astonished at the effect it is having on their entire family.

It's a grass roots kind of thing. It reminds me of what it was like when I was back at Apple in the 1970s because nobody understood personal computing. Even journalists weren't using word processors. We would try to explain why a journalist would be happy to use a word processor, and they didn't really grasp it.

NG: Could this explain why sales haven't been spectacular so far? A quote from yourself, actually, to Joe Flower for *Wired 1.2*: "Any time you get a big jump in performance, a half million or so people will buy it, no matter what you do in terms of marketing and support. Look at the Atari ST — they did everything wrong, and they still sold half a million."

3DO hasn't sold anywhere near half a million. So do these early adopters no longer exist, or does 3DO simply not offer "a big jump in performance?"

Trip: It's just a matter of time. If you look at innovative formats in the past, they've taken anywhere from two to four years to reach the half

million number. We're going to reach it faster. If you look at the history of the industry, the fastest selling product is Super Nintendo. By the time Nintendo really established its franchise it followed along with its 8bit product which was the second fastest selling product in the industry's history.

After these, the products that are competing for third fastest selling would be Sega CD, 3DO and Sega Genesis. They're all about in the same ballpark. And we're way ahead of anybody else further down the list, and these are products like the IBM PC, Macintosh, Commodore 64...

NG: So what happened to the dream? When 3DO was launched, much was made of the idea of a 'global interactive standard' and the creation of an autonomous multimedia 'little black box' that would replace a household's VCR, audio system, computer, telephone, fax, etc. But in the rush for hardware sales this holiday, 3DO's future is riding solely on videogames...

Trip: I don't think anybody has abandoned those dreams. I think you have to look at these kinds of changes as being more glacial. The real question is, how long will it take? It may be five years, maybe it will be 10 years before things calm down and a clear format standard emerges. It is an incredibly difficult thing to do. And companies like) Sony — who have tried to establish similar standards — have demonstrated in the past that it will switch horses when it becomes clear that what they are doing is not the winning approach.

NG: And you're keeping the doors open?

Trip: Yeah, we don't have any desire to exclude anybody, and we try to look at it, not from the perspective of greed or control — what we want to do is create a business model that is profitable for all the companies that are involved. That's the only hope for standardization.

NG: But the typical behavior of third parties could ensure that this 'global standard' never happens — although a standard would be universally acknowledged as a good thing. In the real world, very few software companies turn down a chance to be sole providers of software to what could be the 'Next Big Thing'. The profit potential is just too great. So you have Namco leaping into bed with Sony, companies like Ocean and Ubisoft combining support for Jaguar. Each new system has software developed for it and the confusion continues...

Trip: Actually, that's typically not what software developers are thinking. Sometimes they are motivated creatively. So, if a developer has hot technology that they just can't resist — they want to do something with it, they really want to express themselves creatively. That happens sometimes, but they'll typically only support a new
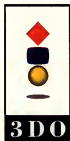
So why "3DO"? No real reason, but it does sit well with "audio" and "video"

3DO

format if it makes business sense. And this is based more on fear: they are uncertain as to what will happen. They can't put all their eggs in one basket.

NG: So you think it's fear that's preventing a standard from easily establishing itself?

Trip: In many ways this industry is like a dysfunctional family, where everyone has been horribly abused. Since I've been in the industry, there has been over two hundred different formats — that's like 10 every year — so as a software developer you get accustomed to the idea that standardization is a pipe dream. It could never happen in our lifetimes, so basically you had better not count on it.

So for that reason, if a company comes along that has a credible strategy, and they are a credible company and have a good technology, it's very hard to ignore it — you have to think about the risk of what might happen if they end up having 20% or 30% of the market. Even though the software companies have the power to force the hardware companies to standardize, they're afraid to use it. Instead they say "We'll do a little bit on this one, a little bit on this one, and a little bit on this one, and we'll let the consumer decide," and well, of course, the consumer gets confused, and they maybe don't buy anything at all.

NG: So how do you break this vicious circle?

Trip: First of all, you have to have a winning technology. If you don't have the best technology, then nobody is going to take you seriously. Second of all, you've got to have a business model that's a win-win. I mean, if the model is not going to be profitable for everybody, then obviously they aren't going to support it.

NG: So that's the global standard — a dream for the future. What about the 'all-in-one multimedia box' that 3DO was initially touted as the first step toward? Are games a Trojan Horse to get 3DO systems into the home today, knowing that the future VideoCD or play-by-cable market could be very lucrative? Or is it the other way around, and this 'little black box' concept is just a clever marketing ploy to simply sell more games?

Trip: I think the simple answer is that there has to be a customer who wants something in order for a new product to get into a home. There are a lot of people out there who want the next step in gaming, and that becomes the compelling reason why this technology moves forward. Once it gets into a household — that's when the other people in the household discover that this isn't what they thought it was — it's not just something for Johnny to play with, it's something that everyone in the family can use. However, it is going to take a very long time before the technology makes everything we have planned feasible.

NG: So is this concept of 3DO evolving into an all-in-one video/hi-fi/computer set-up still on a back burner for 3DO right now?

Trip: Yeah, but there's definitely some flame under it, not too far back on the stove.
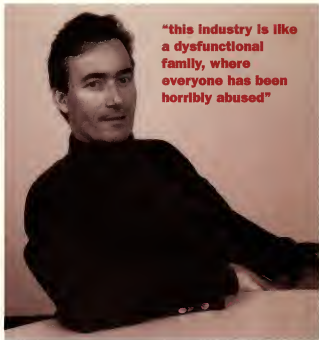
> ## "this industry is like a dysfunctional family, where everyone has been horribly abused"

Being big in Japan

NG: Are you happy with the level of third party software support 3DO has received?

Trip: Yes, very happy. If you look at industry history, no home computer or home video-game system has ever had remotely this level of third party support in its first year.

NG: You must be especially happy that EA has come through with some great software…

Trip: Well, Electronic Arts is our biggest shareholder and that's where the 3DO project started. Frankly, everyone was always counting on software support from Electronic Arts. It was disappointing last fall, because EA, like other companies, was finding that to make really great titles like *Road Rash*, it was just taking longer than they had originally thought.

NG: How important is it that Capcom and Konami are now actively developing?

Trip: It is an incredibly positive thing for us. If you look at the Sega Genesis, it wasn't until it was three years old that the big Japanese arcade companies supported it. And here's 3DO, and we haven't even had our first birthday and they're almost ready to release titles.

NG: One reason that killer software has been in short supply is that it's not just a new system that developers are working with, but a whole new type of game. All of a sudden designers are working with a CD format and considerably more powerful hardware than they've been used to. Is there a danger that 3DO is merely giving free software development lessons for all the other future systems?

Trip: [Smiles] It's always better to be in the lead…

Whether Trip Hawkins' plans come to fruition, only time will tell — **NEXT Generation** sincerely wishes The 3DO Company the best of luck. Our photographer actually has the last word in the interview: "I hadn't noticed your gray hairs before," he teases. Trip bristles, then laughs.

"It's a young industry," he replies. "But it makes you grow old fast." **NG**

ROCKET SCIENCE.

>>■C-OME(IN(■■XX O-OOYOUOREA-O...TULLY!...■IS THAT YOUX?.))))OO YOU R.EAD-ME...TU-LLY?...I'M■■■GONNA)))(FRY YOUR AS*S■■..))) THIS IZ X. ROCKET.))))SCI-ENCE...GAME.1...LOAD-STAR.■■■OO((())U READ.)E.■■■.. THIS I(} ROCK

Next **news**

The latest **news** from the world of **interactive** entertainment

32X takes **Genesis** one **step** forward

But does Sega take two steps back? 32X may make a fast buck in late '94, but it could cost Sega dearly in 1995

Sega's 32X originally was planned for launch at $149 with a game included. Adverse fluctuations in Japanese exchange rates, however, bumped this to $159 with six $10 game vouchers instead of a bundled game

Half a million Sega 32X units reached retail in late November, another half a million arrived early December — perfectly positioned for the holiday shopping season. Genesis owners can buy their ticket to 32bit gaming for $159.99, far less than the $399 it costs for a 3DO or the $249.95 Jaguar. 32X plugs into the top of a Genesis, bringing a new VDP and twin Hitachi 32bit RISC processors to the party (see page 38). But NEXT Generation questions Sega's sense in making an (albeit extremely lucrative) short term killing at the expense of focus, impact and stability over the crucial launch of Saturn in 1995.

That 32X will prove to be hugely profitable for Sega of America is unquestionable. Lured away from 16bit gaming by news of Saturn, PlayStation and Ultra 64, tempted by 3DO and Jaguar, and then marketed to (to the tune of $10 million) by Sega itself, many

Genesis gamers are desperate to reach that "next level." 32X is parent-friendly (it's an add-on, not a start-from-scratch replacement for an expensive investment), it's backward compatible with existing software, it undoubtedly offers a significant boost in performance (compare to a 486 PC) and it's here now. But there are many industry pundits — including some Sega insiders — who feel that 32X shouldn't have arrived at all.

Count the platforms: Sega CD, 32X, 32X Sega CD — that's four separate systems Sega is now committed to (even forgetting Game Gear). Of course, cross-fertilization is possible. But if Sega is to deliver to gamers software that truly takes maximum advantage of its hardware configuration then resources will have to be spread perilously thin.

On the one hand, third party publishers will welcome a fresh, virgin market to compensate for the flagging 16bit business (Capcom — who allegedly has over a million unsold *Street Fighter 2* cartridges gathering warehouse dust — is a fine example). But on the other hand, all gearing up for 32bit development has assumed a CD format, and it's unlikely that many will welcome the cost and risk of continued cartridge manufacturing. That puts the burden of game development back on Sega's shoulders — and the risk of buying into an under-supported system on the gameplayer.
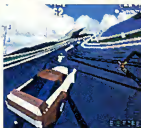
Tom Kalinske, President, Sega of America

"Saturn will be at a price point that will not make it a mass market item. So in terms of volume and keeping the category exciting, it's Genesis and 32X"

That 32X release schedule in full

All titles are subject to change, and don't even think about asking for accurate release dates

Alien Trilogy Acclaim
Apache Domark
Brutal Gametek
Clayfighters 2 Interplay
Castlevania Konami
College Basketball Digital Pictures
Corpse Killer Digital Pictures
Cosmic Carnage Sega
Doom Sega
Ecco Sega
Fahrenheit CD Sega
Golf Magazines Sega
Hoops Virgin
Metal Head Sega
Midnight Raiders CD Sega
Mortal Kombat II Acclaim
NBA Jam: Tournament Acclaim
Night Trap Digital Pictures
Pitfall Activision
Race Drivin' Atari
Shadow Of Atlantis Sega
Slam City Digital Pictures
Sonic Sega
Star Wars Arcade Sega
Stellar Assault Sega
Street Fighter: The Movie Capcom
Super Afterburner Sega
Super Motocross Sega
Super Space Harrier Sega
Supreme Warrior Digital Pictures
Surgical Strike CD Sega
Tempo Sega
Virtua Racing Deluxe Sega
Wirehead CD Sega

Then there's the launch of Saturn. Sega seems to stress that 32X is not a stopgap, but concedes that Sega Japan regards November's launch of Saturn as "the biggest and most important hardware launch in Sega's history." If Saturn is to launch in the US next fall with anywhere near the amount of momentum, anticipation and marketing support needed to take on the singularly-focused Sony, then it needs 100% of Sega's effort — and it needs it now. Either Sega isn't behind 32X for the long haul, or it's in danger of skimping on its preparation for the big battle ahead.

Of course, Sega argues that 32X and Saturn are targeted at two distinct markets — and that promoting one doesn't necessitate sacrificing the other.

"Saturn will be at a price point that will not make it a mass market item," Sega of America's President, Tom Kalinske, told a NEXT GENERATION correspondent, "so in terms of volume and keeping the category exciting, it's Genesis and 32X." But with Sony issuing threats of launching PlayStation at $300, one has to question either Saturn's competitiveness or Kalinske's definition of what price constitutes mass-market.

Either way, 32X is now cashing in all the brand loyalty Sega has succeeded in nurturing, leaving Saturn to fend for itself. The $10 million marketing push behind 32X will presumably extend

At launch, Sega promised three finished games. Three more will make it for Christmas, and here they all are (from top to bottom): *Doom*, *Cosmic Carnage*, *Virtua Racing Deluxe*, (deep breath) *Golf Magazines Presents 36 Great Holes Starring Fred Couples* and *Star Wars Arcade*. The first third party releases will arrive in first quarter 1995

throughout 1995 (if indeed 32X is not simply a stopgap), and overlap Saturn's launch next fall. The consumer will simply become more confused, the stores will have to choose what systems to fill their limited shelf space with and Sega may well find itself with one of more of its platforms left out in the cold.

The bottom line is that 32X

offers Genesis gamers a way to boost their system's performance at a rock-bottom price. But with 32X games costing $70 and significant support from third party publishers still in doubt, it may not be the bargain it first appears. And if 32X is the cause of Sega even slightly taking its eye off the launch of Saturn, then Sega could well regret the day it decided to bet on too many horses.
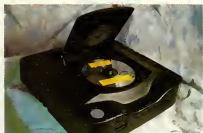
15

breaking

US launch for Neo-Geo CD

Bearing a ready-made range of arcade-quality games, SNK's Neo-Geo CD heads for the US

The new unit is sturdy, attractively styled — and cheaper to build. The flip-top CD lid is raised by a simple button (above).

toploading model will bear the Neo-Geo CD badge. This is the machine that will soon be available officially in the US.

NEXT Generation reporters have managed to take a look at the only unit to have left Japan – even before the machine went on sale in Tokyo at the end of October. In technical terms, the toploading unit is identical to the frontloader. The only differences are superficial: a flip-top lid replaces the motorized CD tray, and the build quality and overall design have been improved. Like the previous model, the new machine's CD drive is a single-speed type, chosen for reasons of cost. The original Neo cartridge specs still apply, although the new machine now has a huge seven Megabytes (56 megabits) of DRAM, 512K of VRAM and 64K of SRAM.

SNK will be pricing the new machine at the same level in Japan as the frontloader – ¥49,800 ($537), for the hardware only. According to Japanese sources, SNK makes no profit on the new hardware. Although the cost of the chipset has naturally decreased since its introduction, the continuing high cost of silicon on the international market means that the system's ample memory (the largest of any console by a huge margin) is a burden that couldn't be absorbed into its retail price.

SNK's library of arcade games includes some truly memorable titles. The sheer power of some Neo-Geo software makes the machine well worth considering

F our years after SNK first unleashed its potent Neo-Geo console on Japan, the Osaka-based company has launched a more determined attack on the domestic market with the introduction of the Neo-Geo CD – a repackaged, restyled and remarketed version of the arcade system that achieved limited penetration into the home.

SNK released a 'special edition' frontloading model in Japan on September 9. The voracious Japanese buying public consumed all 30,000 units on the first day of sale. From now on, though, a new,

Release dates (Japan)

Early November	**•** Last Resort	**•** World Heroes 2
• Nam '75	**•** Baseball Stars 2	**•** Thrash Rally
• Alpha Mission II	**•** Football Frenzy	**•** Blue's Journey
• Top Player's Golf	**•** Samurai Shodown	**•** Ninja Commando
• Puzzled	**•** Super Sidekicks 2	**December**
• The Super Spy	**Late November**	**•** Art Of Fighting 2
• Burning Fight	**•** Magician Lord	**•** Samurai Shodown 2
• King Of The Monsters 2	**•** King Of The Fighters '94	**January 1994**
• Art Of Fighting	**•** Top Hunter	**•** Aggressors Of
• Fatal Fury 2	**•** Aero Fighters 2	Dark Kombat

Neo-Geo: the story so far

The Neo-Geo home system went on sale in Japan in March 1990, packaged with a four-button joystick and a memory card. In a market where 8bit Famicom and PC Engine games were the norm, its arrival was met with general disbelief (and not just because of the price of the software). The technology was more advanced than almost anything available at the time, and delivered vivid, powerful games – SNK simultaneously launched a line of cart-driven Neo-Geo coin-ops, which are still thriving.

Given the age of the hardware, the Neo-Geo's spec is still impressive. Apart from the inclusion of an extra 430K VRAM, 64K SRAM and 56 megabits of DRAM, the CD machine is virtually identical. At its heart is a 16bit 68000 running at 12MHz, supported by a 4MHz Z80. It can handle up to 4,096 colors onscreen from a 16bit palette, with three simultaneous scrolling playfields and up to 380 hardware sprites (plus hardware scaling support). There is also some meaty sound from a 13-channel Yamaha 2610 chip.

With high-memory, high-price cartridges and an entirely arcade-driven software library (no shortage of beat 'em ups) have limited the appeal of SNK's cartridge machine. Now, with the Neo-Geo CD, SNK is promising both a wider variety of in-house software (a Zelda-style RPG, Krystalis, has been held back especially for the format), and greater third party development.

SNK has had to make one major sacrifice to obtain the benefits of CD-ROM: speed. Neo-Geo CD games are handicapped by lengthy loading times – given that some of the recent games approach 200 megabits, those 56 megabits of internal DRAM don't go very far. Most of the games NEXT Generation tested took around 30 seconds to load initially, with subsequent loading taking place when required. Some early, lower-memory games take even longer, because the whole game is loaded into RAM at the outset, requiring a 40-50-second stream of data at 150K/sec (although no further data access is needed once the game is finished in memory). While that's fine for catching up on classics like Magician Lord and

Nam '75, '100 megashock' and soon even '200 megashock' games will result in even longer delays. Time to make a cup of coffee, grab a muffin, and watch an episode of "The Simpsons."

Of course, this problem is not unique to the Neo-Geo CD, and in many ways the delays endured while waiting for games like Samurai Shodown and Fatal Fury 2 to load only serve to heighten the visual and sonic overload that follows. And many games (more than was first announced) will feature re-recorded CD soundtracks, which not only saves on RAM (and therefore reduces loading times) but, of course, means an improvement in sound quality — and if there's one thing Neo-Geo CD games can do, it's the production of excellent sound.

It's not known how much Neo-Geo CD will cost, or what bundled games will be included for the US launch. In the UK it is known that two

In the UK two Neo-Geo CD packages will be launched in 1996. The more expensive beastie includes two joypads (above) and three games

The limited-edition frontloading Neo-Geo CD sold out in Japan at launch

hardware packs are expected to be made available: one consists of the machine, a joypad and Fatal Fury for £399 ($600); the other comprises the machine plus two joypads and three games (Fatal Fury, Super Sidekicks 2 and Last Resort) for £499 ($750). It is likely that US prices will be lower, hopefully no more than a competitive(ish) $500.

With SNK taking the traditional Japanese route of using the hardware as a loss leader, software sales are obviously crucial. Games will probably start at $50, rising to $70 for newer titles, which alone makes the system an attractive proposition, given that many SNES and Genesis games are now weighing in at a hefty $75.

SNK is in the enviable position of having a machine that can immediately call upon a back-catalog of impressive software. Non-fighter fans may find its line-up fairly unappealing — 12 of the 25 known releases are of the brawling variety — but SNK's library of arcade games includes some great titles.

While the loading times can be offputting, the sheer power of some Neo-Geo CD software makes the machine well worth considering. Anyone in doubt should check out Samurai Shodown after playing SFII or MKII on the SNES, it's like reading NEXT Generation after National Enquirer. **ng**

Size matters

The first Neo-Geo carts weighed in at a modest 46 megabits, while recent titles like Art Of Fighting 2 (178Mbits), and movies like The King Of Fighters '94 (196Mbits) and Samurai Shodown 2 (202Mbits) are rapidly approaching the system's max 330 mega' limit. Presumably, the '300 megashock' that will be emblazoned on future Neo carts is also something that potential buyers will be gladly suffering from.

The new joypad (above) has a micro-switched directional control which works well. The rear of the machine features (from left to right) RGB S-Cart, S-Video, composite video and stereo jacks

Coin-ops stay on cutting edge

Coin-op companies flex their muscles at this year's Tokyo JAMMA show

The PlayStation and Saturn represent a significant convergence between the performance of home and arcade silicon. But the arcade industry isn't ready to roll over and die just yet. The Japanese Amusement Machine Show provided an opportunity for coin-op hardware to reaffirm its technological superiority over the new consoles.

Sponsored by the Japanese Amusement Machine Manufacturers' Association (JAMMA) and held at Tokyo's Makuhari Messe venue, the AMS rekindled a few old rivalries between the major arcade players and confirmed the increasing lead that Sega and Namco have over the pack.

The Amusement Machine Show is Japan's premiere coin-op event. Sega, Namco, Konami, and SNK were some of the companies exhibiting

The obscenely large Virtua Fighter 2 display (above) was Sega's pride and joy...

... end with texture-mapped polygons like this, it's not hard to see why

Sega's impressive catalog (matching its incredibly large stand) was headed by a 75%-complete Virtua Fighter 2. A stunning texture-mapped sequel to the Japanese hit, the game is expected to arrive in far eastern arcades before the turn of the year.

Virtua Cop (Model 2) was

equally impressive and on display, although it was described disparagingly by some observers as 'Lethal Enforcers with polygons'. Playing a trigger-happy policeman with an arsenal of futuristic weapons, your mission is to rid the streets of criminals. A simplistic task but, as it turns out, a highly enjoyable one, especially as all the characters react differently according to the situation. The sight of a shotgun blowing your hapless victim across the screen was particularly popular. And those polygons are unbelievable.

Namco, the sole Japanese manufacturer to record an increase in profits last year (up 25%), had its new Formula 1 game, the System 22-based

Ace Driver, lined up on the starting grid. Featuring two views and excellent eight-player action, the game was another example of Namco stealing Sega's thunder, with its refined System 22 hardware outperforming the current king of the driving games, Daytona USA.

Namco's other big showstopper was Tekken. Based on PlayStation coin-op hardware, this spectacular texture-mapped fighting game was extremely slick, despite being only 40% complete. It lacked some of the visual punch of Virtua Fighter 2, and this early version was far too easy, but as a taster for future Namco/Sony collaborations it boded very well indeed. Tekken could easily dent Sega's plans if Namco manages to release the game on schedule (before Virtua Fighter 2).

Konami's $100,000 Speed King uses a reactive cockpit (top) and incredible real-time polygons (above and right)

Namco's new F1 sim, Ace Driver, set the hearts of multi-player racing enthusiasts aflutter

Further evidence of the growing crossover between coin-ops and consoles was provided by Sega's long-awaited ST-V board — development name Titan. Designed as a streamlined version of Saturn, Titan has been optimized for use in the arcade: the twin 32bit Hitachi processors remain but the board now boasts more memory, a faster serial I/O,

a custom Yamaha soundboard (different from the one found in the Saturn unit), and increased speed.

ST-V's main selling point will be its easy access to a wide range of home Saturn software on both cartridge and CD-ROM. The first ST-V titles to see the light of day are Golden Axe: The Duel and Title Fight 2. Golden Axe, now 50% finished, is a one-on-one beat 'em up with large, colorful characters and a wide range of special moves — although it has little of the charm of the original Golden Axe game, Title Fight 2, yet another boxing game, looks highly polished even though it is still at an early stage of development. Sega is hoping that the ease of cross-platform

Although essentially a Lethal Enforcers clone, AM2's Virtua Cop sports fantastic Model 2 visuals which put it way ahead of the pack

breaking

Sega's ST-V board (originally called Titan) was unveiled at the JAMMA show with a 50% version of Golden Axe: The Duel (below left) and Title Fight 2 (below right). SNK's Shin Samurai Spirits (above left) and Taito's Darius Gaiden (above right) were popular sequels

Head start for Ultra 64?

Nintendo is apparently so concerned about the arrival of the Saturn and PlayStation in the US next year (spring and autumn respectively) that it is considering shifting the launch of its Ultra 64 home system forward by several months to mid-'95.

NEXT Generation has also discovered that the only developers with kits (Rare, Iguana and DMA) have been shipped Onyxes while the U64 chipset is being completed.

Nintendo is telling its developers that the finished Ultra 64 will deliver the same level of performance as an Onyx (realtime raytracing of 16bit color polygons at over 30fps, etc).

In the meantime, Nintendo has another in-cart chip for the SNES on the way: a 32bit processor (possibly NEC's V810) for handling fast 3D...

conversion promised by such games will encourage developers to port titles between arcade and console as standard. Development work has already begun on 10 carts designed to prove that the theory works in practice. Sega and Namco's pre-eminent position in the arcade market was threatened this time by Konami. The Kobe-based company previewed a highly ambitious $100,000 simulator title called Speed King. NEXT Generation had the opportunity to test it out, and felt slightly the worse for wear after the experience.

Taito's *Real Punch* found a

novel way to add a little spice to the classic 'punch the ball' game. Before each punch, your face is photographed and digitized. It's then subjected to warping effects based on the strength of your hit; depending on how well you perform, you can end up with anything from a thick lip to full facial mutilation. Perhaps a version featuring digitised pictures of politicians could work well.

Darius Gaiden was another Taito product on display. The third game in Darius series, it continues the familiar theme but offers several enhancements, including more shields, extra weapons and hidden areas. The playability of Taito games remains high, but if new products

like Space Invaders DX are anything to go by, the company is attempting to stave off the future by re-animating the past.

One last note: Virtual reality seems to be taking a tortuous route into the arcades, with only two VR projects present at JAMMA. TecWar, a joint Sega/Virtuality effort, was characterized

by limited gameplay and unexciting backgrounds. A much better game was Taito's Zone Hunter, a 3D blaster (also produced with Virtuality).

In all, an impressive line-up of arcade hardware.

Craig's USA is highly playable but the cabinet (above) is about as cool as Barney

ng

breaking

Saturn at CSG show, launch date set

The CSG show was the perfect opportunity for Sega to reveal its Saturn launch plans and debut software line-up

Putting its lackluster March show well behind, the Consumer Soft Group (CSG) moved to a much larger venue in Ikebukuro, Tokyo for its latest biannual exhibition. Usually well supported by consumers and exhibitors alike, the event saw as many as 58 companies displaying their most recent wares.

Sega's presence at the show coincided with its announcement of the Saturn launch date. In a move designed to gazump Sony (which shifted the PlayStation launch forward to November 30 to maximize its sales), Sega announced its plans to launch the Saturn on November 22. Licensed machines, notably the V-Saturn (bearing the name of one of Sega's development partners, JVC) will appear at the same time. Although the price was still undecided at the time **NEXT Generation** went to press, it will be about 10% less than the ¥49,800 ($500) previously announced.

Protected by its usual mob of camera-phobic officials, Sega's booth featured a range of Saturn and 32X games. In the absence of *Daytona USA*, *Panzer Dragoon* was the hottest

attraction. The game looked almost complete, with all three views (front, side and rear) now implemented and an increased level of detail in the backgrounds. The remaining time before release will be taken up with designing more levels.

Virtua Fighter (see page 66) was playable, but still a long way from the arcade version. *Victory Goal* and *Gale Racer* were also shown, but only on a video wall. Despite Sega's decision to
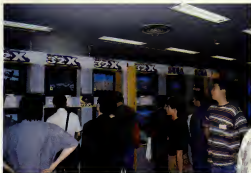

Sega's Saturn stand (above) included playable versions of *Virtua Fighter*, *Clockwork Knight* and *Panzer Dragoon*. After doubts as to whether it would be launched in Japan, the 32X was at CSG, too (left)

Interest in Sega's 32X games was high, although few delegates hogged joypads for long. *VR Deluxe* and *Star Wars Arcade* (top) were most popular

NEC's PC-FX was up and running. Some software looked odd, some impressive

Saturn gear

Accessories for the Saturn were recently shown at an electronics show in Japan which took place a week after CSG. Around the time of launch, Sega will release a multitap adaptor for up to seven-player games (connecting two machines enables up to 12 to play), as well as a mouse, a steering column (in time for Daytona USA, hopefully) and a RAM cart which boosts the system's SRAM back-up capacity 16-fold.

JVC's version of the Saturn, the V-Saturn, will be available at the same time as Sega's. The only changes are cosmetic, and the same price (whatever it may be) will apply

The Price Was Right

As NEXT Generation goes to press, a few weeks remaining before the launch of the Saturn and PlayStation in Japan, speculation about their final prices are still rife. Mirroring Sega's concern about Sony (see story opposite), an SCE official commented: "We feel anxious about other companies' actions. We're aware that we can't keep silent forever, so we'll announce the price in good time."

Analysts in Japan have assembled possible price brackets for each of the coming machines. One thing is clear: It looks like it'll be a consumers' market.

Saturn (available now)
Price: ¥42,800 to ¥47,800
($423 to $473)

PC-FX (available now)
Price: ¥47,800 ($473)

PlayStation (available now)
Price: ¥29,800 to ¥42,800
($295 to $423)

Ultra 64 (on sale Sept '95)
Price: ¥25,000 to ¥29,000
($247 to $287)

3DO (available now)
Price: ¥40,000 ($395)
(based on recent US reduction)

release the 32X in Japan after all, the selection of 32X titles previewed at CSG (Metal Head, Star Wars Arcade and Space Harrier) failed to generate much enthusiasm. The general attitude seemed to be: "Why bother with this kit when I can have a Saturn?" Of course, that's easy for the Japanese to say. Some of us won't get Saturn until "later in 1995."

Time Warner Interactive (present at CSG for the first time) is spreading its wings, with plans to develop for both the PlayStation and Saturn. Its first project due for release is Tama (see page 75). The Saturn version is only a month away but the PlayStation will have to wait a little longer. TWI is also developing Virtua Racing for the Saturn; irrespective of the quality of the Daytona USA conversion, it looks a certain money-maker.

Capcom's barren patch appears to be continuing. Despite an announcement that its current arcade success,

Darkstalkers (aka Vampire), is on the way to the PlayStation, all it had were SFC games: Rockman X2 and Captain Commando and Mickey and Minnie's Magical Adventure 2 (again).

NEC, a company whose games division is aimed almost exclusively at the Japanese market, also showed up. Playable demos on finished PC-FX units included the same selection of (it has to be said, very Japanese) software seen at the Tokyo Toy Show, although the majority are nearing completion.

Also circulating on the NEC stand were rumors of the company's future plans: Several sources claim that NEC is already working on the successor to the upcoming PC-FX system.

Finally, the "ambitious shoot 'em up" (their words, not ours) in development for the PC-FX is to be a 3D remake of Space Invaders. Very ambitious. Not.

One surprise at CSG was the announcement that Time Warner Interactive has snapped up the rights to develop Sega's won Virtua Racing for the Saturn (early screenshot, above)

What is it?

They are infinitely complex yet completely definable. They can generate gigabytes of pictorial or sound data from five of six parameters. They have the potential to make today's data compression efforts look primitive

Nakayama speaks out

Sega's president, Hayao Nakayama, has publicly voiced his fears about the impending console battle.

"There will be chaos," he recently told the Japanese business press. "Sometimes we will win and sometimes others will win. For certain we will survive. Whether an number one or number two, I don't know."

He added: "Sony is a much stronger company than another company I can't name (answers on a postcard). Sony has much more experience in the consumer market."

23

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breaking

UK chip delivers 3D power

NEXT Generation visits a UK-based company with designs on the global PC graphics market

British-based hardware designer 3Dlabs has developed a new chip that could revolutionize PC graphics performance.
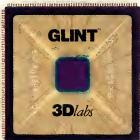
Called GLINT, the 64bit custom graphics accelerator is designed to take on all the rendering-intensive 3D work usually handled by the PC's central processor, leaving it free to perform other tasks. It can produce 300,000 Gouraud-shaded and depthbuffered polygons per second as well as offering texture mapping, alpha blending, antialiasing and fog effects capabilities which easily put it on par with the custom graphics hardware found in the next-generation consoles. Most existing PC accelerator chips are used primarily for uses other than games: speeding up Windows or enabling video playback. While the current crop can be used for game-enhancement (3Dmark claims that with custom drivers, a contemporary accelerator boosts a 486's performance from 320x200 resolution to 1024x768 resolution at 25fps while running FlightSim Toolkit — a gain of eightfold in memory handling), GLINT could well provide game designers with graphics power previously only dreamed of.

3Dlabs

The beast itself: GLINT packs 304 pins spaced at intervals of 0.5 mm
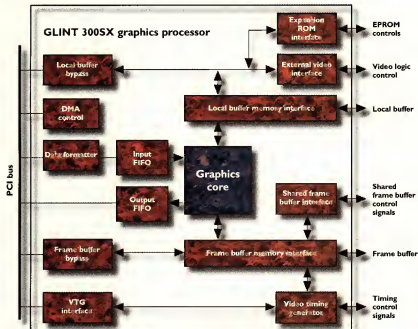
The GLINT story

begins in 1983. "We couldn't even afford a garage," recalls Osman Kent, president of 3Dlabs. "My partner had a house in Kilburn and I had one in the Southwest of London. His house was called the headquarters, while mine was the technical site. We had customers calling at these places, some really prestigious customers, and some of them didn't even realize that they were in the right place."

Kent's company has undergone numerous changes since those humble days. In 1985, 20% of it was sold to Phicom, providing a cash injection that enabled work to start on a project called the GJP, which was intended, in Kent's modest words, to be "the world's fastest graphics engine."

A year later Kent brought the chip over to the US. "No one was expecting us," he says. "We came out of nowhere, this tiny company with world-leading technology." The pedigree of the GJP was immediately recognized leading to Crosfield Electronics' investment in 1986. But the biggest boost to the company's fortunes came in 1988 when it was bought for $12 million by DuPont, one of the world's ten largest corporations. Now named DuPont Pixel, it received

Osman Kent's policy of cooperation rather than confrontation has served him well, so far

An impressive 16,000 polygon demonstration of RenderMorphics' Reality Lab, which automatically detects the presence of the GLINT chip

GLINT 300SX graphics processor

- Expansion ROM interface — EPROM controls
- External video interface — Video logic control
- Local buffer bypass
- Local buffer memory interface — Local buffer
- DMA control
- Data formatter
- Input FIFO
- Graphics core
- Output FIFO
- Shared frame buffer interface — Shared frame buffer control signals
- Frame buffer bypass
- Frame buffer memory interface — Frame buffer
- VTG interface
- Video timing generator — Timing control signals

PCI bus

The GLINT chip's 64bit architecture (left). Z-buffering is achieved using the local buffer's fast VRAM

PC link for PlayStation

Rendermorphics' *Reality Lab* software is an important element in the GLINT story (see overleaf). NEXT Generation has learned that not only is *Reality Lab* currently licensed to major players in the games community, but RenderMorphics is also working closely with Sony, reputedly providing it with a graphics library for the PlayStation. It has also discovered that Sony (ie Psygnosis) is developing an API that will allow cross development between the PC and the PlayStation. The result: PlayStation games will be appearing on the PC, and vice-versa.

research investment of $20 million over the next six years and was granted several key 3D patents.

The GLINT project was started in 1993 when the company was still under the aegis of DuPont. "We began development of the 3D graphics chip that would use all the 3D know-how we had accumulated so far," says Kent. "It was a real mega device that even SGI wouldn't have attempted to do. And it became apparent to us that there were markets outside the high-end systems we were concentrating on. So my partner and I decided to go it alone." Thus was 3Dlabs born, a company with the resources to take on the world.

The success of 3Dlabs is due to a combination of technological expertise and business acumen. Although many firms have produced powerful graphics accelerators, most have fallen by the wayside due to the problem of persuading developers to support a 'non-standard' product. A significant step toward overcoming this obstacle was made in 1990 when Kent entered talks with SGI to license its OpenGL system. At the time, Kent was focusing on Sun SPARC workstations and SGI was wary of licensing its 3D graphics libraries. Kent

managed to overcome SGI's reservations and secure one of the first licenses, with the result that GLINT became the first single-chip device to support OpenGL.

This was a crucial development given that OpenGL is used as an API (application programming interface) by the industry powerhouse, Microsoft. It is supported by Windows NT products and will also have full functionality in Chicago.

Both Motorola and Intel acknowledge GLINT as a significant step toward bringing fast 3D rendering to the home market. Many graphics card manufacturers, like SPEA, are also excited by it. However, Kent denies rumors that Nintendo is planning to incorporate GLINT technology in its new VR32 system.

More concrete is the involvement of Singaporean soundcard manufacturer Creative Technology, which has taken a minority stake in 3Dlabs with the aim of creating a combined graphics and soundcard.

In another move illustrating the multidisciplinary collaboration that Kent

This demo (above) is fully depth-buffered and took just five minutes to create on a PC using Reality Lab

breaking

When requested to be an API like Reality Lab (above), even the home version of GLINT will map 24bit textures onto real-time demos (right)

> "This 64bit custom PC graphics accelerator is on a par with the custom graphics hardware found in the next generation consoles"

hopes will become standard in the computer industry, 3Dlabs has teamed up with London-based RenderMorphics, whose own API, Reality Lab, has built-in support for GLINT. Reality Lab is a Windows-based authoring system that enables games to be created in a fraction of the time consumed by traditional programming methods — to prove the system's power, RenderMorphics produced a true 3D engine running with 256 textured colors and at 15fps in less than a day. With GLINT installed (and auto-detected by Reality Lab) these figures would be closer to 32,000 colors and 50fps. Argonaut, the creators of Nintendo's Super FX Chip and Star Fox, also developed BRender, designed specifically for games development and specializes in fast texture mapping, and offers GLINT support.

Of course, developing a world-class product and selling it to the world are two different things. 3Dlabs proposes to price the basic 300SX at $150 each for purchases of 10,000 units. Another version, the 300TX, with far superior texture-mapping ability, is aimed specifically at arcade developers, who, says Kent, have shown 'considerable interest.' By making it unnecessary for developers to adopt new standards, GLINT has already leaped the first hurdle in the race for acceptance.

Of course, competition is just around the corner. Chip manufacturers including Yamaha (who are supplying Sega with chips for Saturn), Matrox and new start-up Synema all have plans to produce similar 3D accelerators. Presumably ATI Technologies, Weitek and Cirrus who currently produce accelerator chips for Diamond, Orchid and Matrox boards won't die without a fight either.

But if GLINT's plans come to fruition, then the graphics chip standard could eventually be dominated by a single firm to the same extent that Intel dominates the home CPU market.

And that's what the PC sorely needs in order to survive.

Movers 'n' Shakers by Selby Bateman

A monthly look at the business news that affects the gaming world

HUIZINGA WEPT

NEWSLINE:

That was Wayne Huizinga, the guy you rent movies and videogames from all the time, dabbing happily at his eyes as he watched his own Blockbuster Entertainment (he's CEO) marry Viacom ("Beavis & Butt-Head," Nickelodeon, etc.) back in the fall. So, who cares?

BOTTOMLINE:

You do. You're looking at the future of the interactive-entertainment business — the one-stop shopping approach. Huizinga knows that a major consumer distributor (Blockbuster) in bed with a major content provider (Viacom) is a marriage made in interactive-games heaven. Just think what you'll rent or buy from Wayne's World!

SEGA/ATARI: TELL THE LAWYERS TO KISS AND MAKE UP

NEWSLINE:

Relations between Atari and Sega are much improved now that Atari has dropped its patent-infringement lawsuit against Sega, and the two videogame manufacturers have inked a deal allowing Sega to have rights to use more than 70 Atari technology patents. Also, Sega has bought 4.7 million shares of Atari stock. Why the sudden shift?

BOTTOMLINE:

The reason that the Atari Jaguar videogame system has had the visibility of a stealth bomber stems from the fact that Atari had few funds to properly market the system. Now, with $50 million licensing money and another $40 million from the stock sale, Atari is mounting a nationwide Jaguar attack. For Sega, the litigation was a drag, and Atari's technology gives Sega more opportunities and a strategic partner.

SPEAKING OF SEGA...

NEWSLINE:

Sega's section of DisneyWorld's Innovations high-tech pavilion in Orlando has, not surprisingly, turned out to be the most popular exhibit for kids. Sega's H.L. Bud Werner, vice president of merchandising, says that three-quarters of a million people are moving through on a monthly basis.

BOTTOMLINE:

Yet another coup for Sega President and CEO Tom Kalinske, who brainstormed the idea with Disney's Micheol Eisner a couple of years back. Rumors here been surfacing that Kalinske end his winning strategies at Sega are of keen interest to several companies — including Disney — who are looking for top talent.

NINTENDO PROVES WHAT GOES AROUND, COMES AROUND

NEWSLINE:

It's 1988, and a good number of retailers are privately grousing to anyone who'll listen that Nintendo of America (NOA) is browbeating them into taking what NOA wants them to take — or do without. Now, it's 1994, and NOA is guaranteeing it'll buy back any unsold Donkey Kong Country carts that don't sell through.

BOTTOMLINE:

With retailers already queasy over the possibility of a drop in the 16bit cartridge videogame market right now, and with Sega having cleaned Nintendo's clock last year on 16bit sales, NOA is making sure that DKC doesn't end up DOA. A less cynical view might allow that Nintendo does have high confidence in the new title, and is daring retailers not to sell the cart through. Don't worry, it's selling.

IS IBM ABOUT TO BUY APPLE? DON'T LAUGH JUST YET...

NEWSLINE:

What's with Apple Computer's stock, up and down recently as rumors that Motorola, IBM, or AT&T might be interested in purchasing the company?

BOTTOMLINE:

Expect the volatility to continue. While IBM and Motorola are working with Apple on PowerPC computers, they're still very competitive with one another. But both IBM and Apple face market-share problems that could make a merriage — once unthinkable! — a salvation for both. If not a marriage, some sort of investment in Apple may be more immediately in the offing for IBM.

IS SUMMER CES GONE FOREVER?

NEWSLINE:

So, how is it that the Electronic Industries Association has such a popular January Consumer Electronics Show (all space sold out), but had to 'postpone' the Summer CES until '96 in favor of Electronic Entertainment Expo?

BOTTOMLINE:

Well, two things, really. One, Intertainment World and Knowledge Industry Publications had the foresight to place E3 in LA — easy access for the bulk of the software companies. And more importantly, it's an ell-entertainment show, not having to share a software focus with a hardware focus. Videogames represent 12% of the January CES, with other software and interactive segments representing a total of 20%. The interactive-entertainment biz is getting too big to be a subset of a consumer-electronics show.

Movers 'n' Shakers is edited by Selby Bateman, the executive editor of *Computer Entertainment News*; the US's leading trade newspaper for the the computer leisure industry

3DO faces **mutiny** by **game** developers

As 3DO's manufacturers balk at absorbing $200 million in projected losses, angry games producers face a $3 fee on each game produced

"If I don't have software companies, that's one problem. But that's not as big a problem as if I didn't have hardware manufacturers"

At a recent meeting with 3DO developers, Trip Hawkins broke the news to Sanyo, Panasonic, GoldStar and Creative Labs that combined, they face losses of more than $200 million over the next 15 months if 3DO players are to remain at a competitive price point. Unsurprisingly, this news was spectacularly unwelcome. Without a revenue-generating plan to ease the manufacturers' burden, 3DO could have found itself in serious risk of 3DO factories around the world grinding to a halt...

Unluckily for games developers, Trip Hawkins had a plan. 3DO games developers are to be 'taxed' $3 per copy of every game they make. This is on top of an existing $3 royalty as part of the original 3DO deal. This new revenue will provide a "Market Development Fund" (MDF) — half of which is believed to help manufacturers' profits, and the rest spent on marketing 3DO.

"We have a significant window of opportunity this Christmas and the MDF program allows us to take full advantage," argues Cindy McCaffrey, 3DO's public relations manager. "We anticipate the MDF Program to dramatically increase the installed base through increased consumer awareness."

Fine. But this was news to games developers, who already are finding it tough to make money on 3DO publishing. Most were shocked by the news, and a few even question 3DO's right to impose such a burden out of the blue. Tom Zito, CEO of Digital Pictures comments: "It makes me rethink developing for 3DO. We have consulted with our attorneys and believe that this action by 3DO is illegal." John Eastburn, COO for Crystal Dynamics, adds: "This would be a lot easier to swallow if (3DO) had met (its) commitments in building an installed base before imposing a price increase."

"Even with the MDF, the 3DO licensing arrangement remains the best deal in the industry," says McCaffrey. A view echoed by Rocket Science's CEO Steve Blank, who signed on with 3DO to release LoadStar after the MDF deal:

3DO manufacturers cry "enough" at news of $200million losses over the next 15 months. Instead, the games developers have to pay

"This is simply 3DO putting on its pants just like every other hardware vendor. Now 3DO is on a par with everyone else."

NEXT Generation can only conclude that 3DO is gambling all it's got on one big push this holiday season. The MDF is not a long-term plan for success, and Trip Hawkins has to realize the danger of deterring software support — but right now he has no choice. "If I don't have software companies, that's one problem. But that's not as big a problem as if I didn't have hardware manufacturers," he commented.

"If Trip gets past this Christmas still breathing, then 3DO will be an extremely viable platform in 1995" surmises Blank. But if the marketing generated by MDF fails to push 3DO sales over 500,000, then — having sacrificed a lot of developer goodwill — it could be game over for 3DO.

3DO

Arcadia

An insider's view of the **coin-op business**, and how it affects the games *you* play

Marcus Webb is the editor-in-chief of *RePlay* magazine, the US's leading trade amusement magazine

by Marcus Webb

Arcade owners vote Killer Instinct best new game

At the recent Amusement & Music Operators Association (AMOA) expo in San Antonio, Texas, the men and women who place coin-op video games in arcades and other public locations voted Midway Mfg.'s *Killer Instinct* as "best new game" of the fall. It's a major honor, but almost as political as the Oscars.

For example, does the award mean *Killer Instinct* is more fun to play than *Virtua Fighter II* or *Rave War*? No, the voters weren't even shown those titles... and most of the voters don't play videogames anyway. The vote really means business experts know more money, with less service headaches, from *Killer Instinct* in arcades, 7-Elevens, and similar stores, than from anything else they saw at the expo. (By the way, last year's winner was *Mortal Kombat II*).

Killer Instinct voted "Game most likely to make wedges of cash" by AMOA

National Amusement Network

Ready to turn your videogame skills into cash and prizes? Starting in 1995, a nationwide electronic arcade will enable players to compete in local, regional and national videogame tournaments. A newly formed corporation called the National Amusement Network, Inc. (NAN) plans to use modems to link up to 100,000 coin-operated games into a very sophisticated circuit managed by Electronic Data Systems (EDS), the owner of the world's largest private digital data network.

Players will use joystick and buttons to log onto the NAN system, entering name, address and demographic data. A tournament on a specific game could take place over two or three days with players competing solo for best scores. At the end of the tournament, NAN's central computer will collect the scores, compare them, and decide the winners.

Williams/Bally-Midway is providing the first games for NAN tournaments. Several other major videogame factories

have said they're also interested in participating. Limited testing of the network was slated to start in Kansas and Ohio last November. In addition to tournaments, NAN will also offer official league play, merchandise coupons, membership cards for players, and possibly even new fanzines.

Sega Buys Data East Pinball

Sega's US coin-op subsidiary has purchased the US-based pinball division of Data East. The *Japan Economic Journal* estimated the selling price was $36 million. The acquisition more than doubles Sega's US market share, since Sega USA's annual revenues are $55 million and Data East Pinball accounts for 74% (about $64 million) of Data East USA's total revenues of $87 million. Sega already owned 16.8% of Data East stock. The nine-year-old pinball division, soon to be renamed "Sega Pinball," reportedly controls about 25% of the world pinball market (with 65% controlled by WMS and 10% by Premier Technology). Sega was involved in making pinball back in the 1970s but later dropped out of this niche.

Coin-op Wrestles with Ratings

After a year of threats and public pressure, the U.S. Congress has succeeded in forcing videogame manufacturers to adopt "voluntary" ratings for the consumer market. The AMOA favors an independent ratings system. But most coin-operated videogame factories have never liked the idea very much and fear that ratings could harm either sales or earnings.

For the record, the American Amusement Machine Association (AMMA) has assured Congress it supports independent content review and independent labeling. Officially, coin-op videogame factories are "consulting" about how to adopt the new, home-game rating system to arcade products.

Privately, however, leading factory execs hope Congress will be satisfied with ratings for the $5 billion/year home market, and will eventually forget about raising the $50,000 or so coin-op videos which are sold annually in the USA. Others hope a self-administered rating system will suffice, even though Congressional leaders strongly reject this approach. AMMA's own president, himself not a manufacturing exec, has predicted that arcade game makers will eventually be forced to do essentially whatever Congress wants.

Videogame Factories Plan Their Own Arcade Networks

Will videogame networks ever reach the point where an arcade player in, say, New York could compete directly in "real time" against a player in a California arcade or a fighting or driving game? Insiders say such firms as Sega, Namco and Williams/Bally-Midway are already doing the R&D, and one of these arcade giants is expected to bring its finished system to US arcades by late 1995.

Sega publicly demonstrated remote interactive gameplay in Japan a year ago, using ISN phone lines to link a driving game to its Osaka branch office with an identical unit in its Tokyo headquarters.

breaking

VR32: a clearer picture emerges

Nintendo's 32bit 'Virtual Boy' is scheduled for worldwide shipout in April next year

Since its announcement in April, Nintendo's 32bit VR32 system has been the subject of much speculation, conjecture and general misunderstanding. Nintendo plans to dispel all preconceptions when it unveils the hardware at the Shoshinkai show in Tokyo on November 15, a full six months before it is expected to go on sale.

Pin-sharp details are still elusive, but it is now believed that the VR32 'Virtual Boy' will be a portable, battery-operated unit which accepts cartridges and will either be attached by a lead to a visor headset (see below), or come as a lap-held integrated unit. The display will be based on an oscillating mirror-generated stereoscopic projection technology developed by an Reflection Technology Inc. It's possible that it consists of a monochrome display which can be projected up to three feet in front of the player as a stereographic image.

Before news of Nintendo's deal with Reflection Technology was announced, pundits had previously believed that Nintendo has tied the knot with one of two alternative players in the VR industry.

The first was Virtual IO, manufacturer of fully engineered HMDs that uses 'non-immersive' technology — that is, it's possible to see around and through the HMD, which reduces the dangers of tripping over the dog, falling in the bath, etc. But a conflict of interest (Virtual IO is developing an HMD for TCI's Sega Channel) presumably stood in the way.

The second company, a Redmond-based (think about it) outfit called RPI, was known to hold some important VR patents. The technology had never been seen in public, however, and the company was known to have been involved in serious negotiations with another major hardware manufacturer.

Whether 'Virtual Boy' will feature a HMD is still the major undisclosed issue. Many pundits believe Nintendo will shy away from a HMD for fear of potentially massive health risks (anyone remember Steve Martin in *The Jerk*?), but the financial incentives for producing the world's first half-decent VR setup may be simply too great to ignore.

The alternative, viewed-from-a-distance lap-held integrated unit seems a lot more likely.

Expect the full **NEXT Generation** report next month...

ng

The Harumi International Trade Center is where the VR32 will make its debut

Deep is its Kyoto HQ, Nintendo is working on what could be its next big success

Japanese magazine The Super Famicom recently printed this artist's impression of a HMD-based VR32. How much resemblance this bears to the real VR32 is still unknown

Revolutionary

times

require a

revolutionary

magazine...

...Subscribing to it, however, remains refreshingly **simple**.

Generator

by Mark James Ramshaw

A look behind the scenes of game development, rumor, gossip and scandal

G'day to you. I'm Mark James Ramshaw, and this is my very own little corner of **NEXT Generation** magazine. Having recently finished a stint producing games for Sony's PlayStation, from now on you'll find me here, reporting back after a busy month of chat and gossip with the key developers in the games industry.

This is kind of an introductory piece, so forgive a lack of hard fact. I want to set the scene for what's to come: There's a new optimism in the land of games development. Programmers and designers have always been frustrated by the limitations of the hardware with which they've had to work. But that's all changing. With high-spec PCs in so many homes, and development kits out there for 1995's trio of super machines — they finally have the processing power to produce the kind of images we've been dreaming about.

But which of the games will come out on top? John Norledge, head of software development at Virgin Europe, explains: "We're producing software for everything — Sony PS-X, Sega Saturn, 32X, Jaguar CD, Philips' CD-I and PC CD-ROM."

Virgin's commitment to all formats reflects the fact that the industry really isn't sure which machines will dominate. It also highlights the relative portability of software on the various systems.

"We produce a range of titles which we believe are strong, then convert them to the most suitable platforms." Said Norledge, "In the case of many of the products we started two years ago for PC, we're now converting them to 3DO. When we design games now, we rely on being able to render high-quality graphics on the fly — the PS-X, Saturn and Nintendo machines will all give us the freedom to do this."

Yep — graphics are what it's all about now — real-time, textured, light-sourced polygons are where it's at. The actual games are unlikely to ever get that complex — when it boils down to it, we all simply want them to look real feel more believable.

Peter Molyneux, head of Bullfrog (responsible for Populous, Powermonger, Syndicate, and now Magic Carpet) has this to say on the subject of graphics and the chicken perfect 3D graphics system: "It's an interesting time we're in, but also quiet distressing. All us poor developers are having to reinvent the wheel every time new hardware is introduced. With Magic Carpet we've got our one little 3D engine working away, and the results are very nice. We're using an operated version of that engine for next project too — Syndicate 2."

But when it comes to developing for new machines, it's not as easy as it first appears. "Our engine is great for the PC," says Molyneux, "and we breathed a great sigh of relief when the PS-X was announced — after all, it's got 3D routines built-in. But it's not that simple, because Sony's system isn't appropriate for our needs. And so we must go back and redo all our 3D systems again. Each time we think we've created the ultimate engine a new development can mean you've got to go back again, it's very frustrating."

With in-game graphics, the ultimate goal is, of course, to have enough polygons moving fast enough, and in enough colors to produce near-TV quality images — about one million light-sourced textured polygons in 16.8 million colors; at 640x480 should just about do the trick. That's when we'll be able to control a believable image of James Dean or the latest Hollywood heartthrob in real-time. Now, that's still a ways off — between six and 10-years, I'd say. But even now we're at a new dawn for the videogames industry. Imagine image quality has improved tenfold in the last couple of years.

So join me next month. As I take my first dive into the deep end of the games industry, go fishing for the latest developments and deliver them to you with a winning smile. In the meantime, have a blast with the rest of the issue.

Mark Ramshaw is a free-lance journalist and games designer. On a global scale. He can be contacted via the NEXT Generation offices

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Datebook

December

Electronic Learning Fair December 2-4, 1994, San Jose, CA. San Jose Convention Center. Education software trade show, sponsored by many high-tech firms. K-12 grades will be represented in all subject matters, in 12 simulated model classrooms, 20 to 30 workstations will be available for hands-on use, Open to the public. Presented by the San Jose Mercury News. General phone number for more info: (408) 271-3797.

January

Consumer Electronic Show (CES) Winter '95; January 6-9, 1995, Las Vegas, NV, Las Vegas Convention Center and selected hotels. Closed to the public. Consumer electronics running the gamut from cartridges, CD-ROMs, PC games, audio and video products, car stereos, radars, etc. A large component of the show is interactive entertainment — and that means games! Electronic Industries Assoc. (202) 457-8700. Don't miss the **NEXT Generation** magazine launching party.

UPDATE '95: High-Resolution Digital Imaging Show January 19-21, 1995. Long Beach CA. Location: Long Beach Convention Center. Produced by the people who give you the Gutenberg Festival, UpDate opens this year. Horizontal market trade show on high resolution graphics — including game animation and graphics. A showcase specifically designed for high resolution hardware and software products. A conference will run concurrently. Admission price: $10-$30. Call JCJ Properties and Gutenberg Expositions at (714) 921-3120.

February

Intermedia '95 February 7-9, 1995 San Francisco, CA. Moscone Center. Closed to the public. Leading CD-ROM and multimedia tradeshow showcase for hardware manufacturers and multimedia software publishers. There will be a show floor for manufacturers and a concurrent conference with booths, speakers, panel discussions and industry leaders. Total attendees forecasted at 23,000. For more information call Reed Exhibition Co. at (203) 352-8254.

March

Folio-Midwest March 13-16, 1995 Chicago, IL. Located at the Sheraton Chicago Hotel and Towers. For magazine and book publishing professionals. Folio-Show's 20th anniversary is composed of publishers showcasing educational programs, pre-press technologies, and new media, covering all aspects of magazines and book publishing. Produced by Cowles Event Media. For more information call (800) 927-5007.

Software Publishers' Association Spring Symposium, 1995, San Diego, CA March 11-15. San Diego Marriott Hotel in the Marina. There will be seminars, heavy networking, and more. Not open to the public. Primarily CD-ROM based entertainment, consumer and business applications, some cartridge products will be available. Mostly panels, CODY's gala at the end. Ask for the meetings department at (202) 452-1600.

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Players

1995 will see the hardest fought system wars of all time. As 3DO, Atari and Philips scramble for market share, Sony, Nintendo and Sega circle for the kill. So who's going to come out on top? **NEXT Generation** profiles the contenders...

P rogress is inevitable. And as the age of 16bit dominance draws to a close, all eyes are now fixed firmly on the future. The renaissance of PC gaming witnessed over the last 18 months is testament to the fact that gamers are demanding more — and with a decent PC setup now costing in excess of $2,000, it would seem to be at any price.

Of course, the PC scene will continue to thrive; as long as PCs continue to be used at work, they will continue to be used for play. But it's the dedicated games machines that will drive the future of interactive entertainment forward. They're all targeted at the mass market ("Anything over $500 just isn't in the picture" affirms Sega USA's top executive Tom Kalinske) and they're designed purely for high-end games playing.

Each of the nine systems profiled over the following pages is aiming for the top, but the market can only support three, maybe four mass-market formats. Some will fail. The question is, of course, which are going to make the cut? The following profiles aim to evaluate each system as it stands today.

Some are already in the stores, some aren't scheduled for release until a further 12 months. All will be after your investment in the scramble for market shares. This is why you need **NEXT Generation**. Because when caught in the crossfire of the biggest platform wars ever, you need reliable information.

CD-i

Philips' accidental games machine could, just possibly, be the tortoise in a field of hares...

O riginally held back by a clumsy design, a lack of quality games, and a high price point, Philips has recently carried out repair work on all areas for CD-i. But — as the core technology inside CD-i looks back on its tenth birthday — is it too late to make a real impact?

As opposed to the VCR-like 220, the sleeker 450 model sells for $299. It actually looks like a games machine and is supported by a library of around 150 titles — the majority of which are games. The 220 model remains at $499, boasts a few extra features but uses exactly the same technology. There is also a Magnavox unit at $399.

It is Philips' realization of the importance of the games market that has led to its rethinking on CD-i. A senior company executive candidly admitted recently: "I think it's fair to say that Philips didn't properly appreciate the key role of games in its software catalog. They sidelined games development when they should have mainstreamed it." Philips will be hoping that CD-i's reputation as a leading-edge games machine will be boosted by the arrival of *BurnCycle* (reviewed page 94) released at the end of October.

The firm bundled the title — which it describes as "the first real CD-i blockbuster" — with the 450 unit in November. The 450 remained at $299. Meanwhile, the CD-i 550 shipped in late October. The 'new' model is actually just the 450 unit bundled with Philips' DV cartridge and sells for $499. The DV cartridge is currently available on its own for $249.

Halfway through '94, Philips' global installed base was estimated at around 400,000. It claims it is still on target to reach its goal of one million CD-i units sold by the end of the year. CD-i will attempt to increase its mass market penetration in '95 when it launches a TV with CD-i built-in, and a hi-fi system with CD-i replacing the standard CD audio unit. Both are due in the first quarter of '95.

In truth, CD-i's only game-playing trump card is the DV cartridge, which enables movie-quality video footage to appear in its titles. Of course, the gameplay value of games featuring extensive use of FMV (Full Motion Video) is perennially questioned and hence this one 'advantage' of the CD-i turns into something of an albatross: Philips finds itself in the position of not only having to defend itself as a viable gaming system, but also defending a struggling new game genre. So how strong a card this really is remains to be seen.

> "They sidelined games development when they should have mainstreamed it."

CD-i's best hope for continued game support is to get units into homes for other reasons: for movie CDs, photo CDs or audio units. A stable games market will then inevitably follow.

Launch: 550 (450 bundled with DV cartridge) shipped late October, 1994. The 450 bundled with *BurnCycle* shipped in early November

Price: 550 (450 bundled with DV cartridge) is $499. The 450 bundled with *BurnCycle* is $299

key software

Philips is placing hopes on *BurnCycle*. Read the definitive review on page 94

Trilobyte's *The 7th Guest* benefits (sort of) from CD-i's DV cartridge

Voyeur — one of the first innovative uses of FMV is a game, only on CD-i

tech specs

CD-i

CPU:	68,070 running at 15.5 MHz
Graphics:	Various modes
Colors:	True color from a palette of 16.7 million
Memory:	1.5 Mbits
Resolution:	384x280 - 768x560
Sound:	ADPCM eight channels MPEG cart offered as option

Genesis 32X

"Definitely not just a stopgap."
Sega pumps up the Genesis — again

T he Genesis market may be on the wane, but Sega seems determined to keep the machine alive well into '95 and beyond. This will be done mainly through the plug-in peripheral, 32X. It's due for launch around the globe in time for the holidays. In the US it's priced at $159.

The problem is that no one really knows Sega's thinking behind the 32X: Is it genuinely a platform that will be committed to in a year's time, or simply a way of grabbing extra 1994 mind and market share in the absence of the bigger prize, Saturn?

Either way, Sega scheduled for six titles to be available at launch and are promising plenty more to come throughout the year. Of the first crop, the three most promising are Star Wars Arcade, Doom, and Virtua Racing Deluxe. All will be 32X cartridges, running only on Genesis units that have the peripheral attached. 32X CDs should

> ... by far the cheapest ticket to the next generation...

come through in the new year. Again, these will only run on Sega CD combos which have the 32X attached — clumsy, but it works.

Third party support is due to the market in the first half of 1995, but most publishers seem to be limiting their commitment to what they see as merely a stopgap measure. Electronic Arts, for instance, without doubt the most prolific Genesis publisher of the past few years, only has plans for one or two 32X titles.

That said, it's worth pointing out that one of those titles will be the fourth in the series of Strike games (after Desert, Jungle and Urban). It's provisionally titled Strike C.O.R.E. Set in 2008, the game involves a threat from alien — rather than human — foes and it will be exclusive to 32X when it's launched in the second half of '95.

Another big name lined up for 32X is Mortal Kombat II which has just been completed in the UK and, according to a source at the development company Probe, "looks and plays exactly like the coin-op."

Sega still plans to bring out an all-in-one Genesis with 32X and CD built-in sometime in '95, but isn't making any official announcements on the progress of the project. The slow sales of CD-X (a combination Sega CD and Genesis unit) may be triggering caution.

Proof of just how efficient pushing the Genesis still further will be proven in the software. But system bottlenecks are destined to ensure that the law of diminishing returns applies here, just as it applies to those who'd install a turbocharger on a supermarket cart. But at $159, the 32X offers by far the cheapest ticket to the next generation, and, until the launch of Saturn, this unit will benefit from 100% of Sega's considerable marketing muscle.

LAUNCH: in the US, Europe and Japan, the unit shipped in November 1994. Integrated 32X/Sega CD/Genesis unit will ship sometime in 1995

PRICE: $159 for a stand-alone unit

key software

UK-based Probe promises an arcade-perfect version of the Williams' coin-op

Id Software's Doom in all its bloody glory. Shame it's not full screen

32X Virtua Racing promises a more arcade-like feel than the Genesis game

tech specs

32X

CPU: two Hitachi 32bit RISC processors running at 23MHz/40MIPS

Co-processing: Genesis 68,000 &new VDP

Graphics: RISC processors enabling 50,000 polygons/sec

Colors: 32,768 simultaneous colors

Memory: 4Mbit RAM (plus Genesis and Sega CD capacity)

Video: Able to overlay a plane of graphics over standard Genesis video

Audio: The stereo and digital audio are mixed with Genesis sound

ng

Jaguar

Atari's 64bit attempt to recapture
the glory days of the VCS
suffers from a cruelly
ironic lack of software

In the early 1980s, Atari's world-conquering VCS died, smothered under an avalanche of poor quality games. Videogame lore has it that there were more copies of *E.T. The Extra Terrestrial* manufactured than there were VCSs in existence.

Going into 1995, the main problem for Atari's reasonably impressive cart-playing sort-of-64bit cart (see tech specs) has been a lack of software. Up until this holiday season, there have been just seven titles available for the machine, although the firm is hoping to have about 30 on the market in time for the holiday season.

The highlight of this holiday's release
schedule is undoubtedly *Alien Vs. Predator*, probably the first game (other than the stunning *Tempest 2000*) to really show what Jaguar can do. But there's precious little else to get excited about.

A Jaguar CD drive was due for release in late November. It's priced at $199 and software support will be limited this year. At launch time there will be four Jaguar CD-ROM titles: *Demolition Man*, *Battlemorph*, *Blue Lightning* and *Highlander*. The drive will use Cinepak for compression of video onto CD, but Atari does have plans to release an MPEG-compatible cartridge in early 1995 to enable Video CD standard titles to be played.

The firm's problems remain a lack of software and funding. Atari claims the software problem is already being remedied by titles such as *Alien Vs. Predator* and a number of third party titles. But having suffered financially in the last decade (remember the firm hasn't really had a global mass market product since the VCS), Atari simply doesn't have the muscle to compete in market-spending terms with giants like Sony and Nintendo. A recent bonus, however, came in

September when a deal was announced by which Sega is paying Atari $50 million over seven years for the use of Atari patents, and additionally buying $40 million of Atari stock. "The increased cash position will be used, among other things, to improve our marketing position this fall" said Sam Tramiel, president and CEO of Atari Corp.

If 3DO's Trip Hawkins is correct, however, when he says that "you need $500 million in capital to be a real competitor" (see page 6) then this windfall is still merely small change. You wouldn't see **NEXT Generation** turn it down, however.

> ...Jaguar will have to
> succeed largely on
> shipping out first...

and on its own technical merits — merits that will only become apparent when the software support for the machine increases dramatically in both quality and quantity.

LAUNCH: CD drive shipped November 1994

PRICE: Jaguar priced at $249.95 **ng**

tech specs

Jaguar
CPU: Motorola MC68000
Graphics: Two custom-built 64bit RISC processors; high speed Blitter GFX chip with hardware support for Z buffering and Gouraud shading; custom graphics processor with 27 MIPS
Memory: 16 MBits RAM
Colors: True color palette of 16.7 million
Sound: DSP with 16bit DAC
Resolution: Up to 720x576
MPEG offered as peripheral option in '95
Format: Cartridge with 8xJPEG compression. 300k/sec CD drive about to be launched

key software

Alien Vs. Predator — Jaguar's flagship title for the year ahead

Tempest 2000 proves that old games can be taught new tricks. Classic stuff

And, of course, the inevitable Doom, this one features elements of Doom 2

NEC FX

The PC Engine outsold Sega's Genesis in Japan, but now NEC looks for a more global platform

The FX, a curious looking machine resembling a PC tower, is NEC's latest attempt to muscle into the global games market. The 32bit CD machine has been in development for more than four years now and is an ambitious replacement for the PC Engine which made little headway outside of Japan.

Released in the US under the name of TurboGrafx, the PC Engine maintained a small cult following of gamers reliant on whatever software was imported from across the Pacific. In all honesty, it's unlikely that the FX will ever manage much greater penetration into the mainstream, but as long as the machine sells well enough in NEC's homeland to warrant developers' attention, then you can be sure of a constant trickle of games — just enough to keep small pockets of diehard US gamers happy.

Those gamers already bitten by the NEC bug will be disappointed to learn that CD PC Engine software will not run on the new offering. It is, however, compatible with NEC's PC-98 and can be used as a CD drive for the machine.

FX was due to hit the Japanese market in November, but NEC has not made any decision yet about launching in either the US or Europe. The unit is priced at the yen equivalent of around $400, but NEC believes it has to bring the price down considerably when it decides to attack the US market.

So far, there are only a handful of third party publishers, all of which are Japanese companies. In fact, very little is known about the initial software support. NEC claims that around 15 titles are in development, but is giving away very few details about individual games. Four or five should be available before the holidays.

NEC's forecasts for FX sales are not too ambitious. It expects to sell 50,000 units in Japan its first year: Not the kind of numbers to set Sony, Nintendo and Sega running to the corporate privy in terror.

So while the NEC FX may well prove to be a competent gaming platform, modest ambition, a strange design and a lack of software support do, however, seem to limit its chances of being the first machine to bring NEC any real games market success beyond the limits of its home country.

NEXT Generation will continue to cover products for the FX until it is possible to determine if anyone really cares.

LAUNCH: November 1994 in Japan. No plans yet for the US and Europe

PRICE: Yen equivalent of approximately $400

> ...in development for over four years, an ambitious replacement for the PC Engine...

key software

FX Fighter features beautifully shaded polygons, how it plays isn't known

Three nubile 'anime' girls wander around a spaceship in this adventure

Expect the Japanese penchant for semi-naked girls to surface with FX

tech specs

NEC FX

CPU: 32bit RISC processor
Memory: Main 2Mbit; VRAM 1.25 Mb, ROM 1MB, CD buffer 256Kb
Back-up memory: 32K SRAM
Graphics: 16,770,000 colors; 320x240 maximum resolution; maximum sprites 128; maximum background screens 7 Rotation/ enlargement/reduction/transparent/ fade/priority
Image processor: JPEG; horizontal scrolling
Format: FX CD, audio CD, CD+G, Photo CD

Neo-Geo CD

SNK embraces CDs as the savior of the Neo-Geo. But can CDs deliver the same arcade feel?

The prohibitive cost of software (some titles more than $200) has always kept SNK's cart-playing Neo-Geo very much in the specialist category: a luxury item for extremely dedicated and extremely wealthy gamers.

The recent launch of a CD unit in Japan, however, could finally introduce this impressive technology to the mass market. The machine has just been launched in Japan as a limited edition (30,000 units) front-loading model with a price tag of just under ¥50,000, equivalent to approximately $525 in US currency.

Encouraged by the response from consumers and determined to secure continuing software support, the firm has now announced that it will manufacture a top-loading system to be made generally available at a lower price, probably in December '95.

Internally, the only difference between the CD and cart version is the addition of seven megabytes of DRAM and a slight tweaking of VRAM and DRAM. The transition from cartridge to compact disc has proven difficult for everyone, these new hardware features are simply SNK's solution to the problem of speed.

The most crucial advantage of CD is the more affordable software price. Neo-Geo carts are spectacular because of their sheer size — some weighed in at over 150 Mbits. All that memory costs an awful lot of money. And yet, even the largest game will fit into a CD and so will carry a price tag of between $50-$80, equivalent to about £30-£50.

Unfortunately for existing Neo-Geo owners, the CD drive is not being offered as an upgrade but as a stand-alone machine. Still, anyone rich enough to have bought the original probably won't balk at more investment.

SNK's plan is to release cart and CD versions of all its titles, carts appearing first, followed by CDs within a month or so after. It is also busily converting many of its old cart hits to CD.

So far SNK can only claim two third party publishers. But with a large library of its own titles, SNK already has accumulated 25 Neo-Geo CD titles. The firm hasn't announced any plans for launch in the US or Europe, but it looks likely that both territories will be targeted next year.

Question marks hang over how a Neo-Geo CD game will 'feel.' Certainly the main attraction with Neo-Geo's cartridges is the arcade-perfect speed, look and gameplay. If the addition of a CD drive messes with this popular (if not necessarily successfully "bringing the arcade game home" feature, then it is difficult to see how SNK can really compete with the big boys.

Neo-Geo carts are spectacular because of their size...

LAUNCH: Limited edition version already available in Japan. Lower cost top-loader released in December. Should hit US and Europe in '95

PRICE: Currently $520 (¥49,800), but the new model will be cheaper

key software

NOW LOADING
PLEASE WAIT

Neo-Geo CD games can take up to 50 seconds to load from CD to RAM

Samurai Shodown — one of the most impressive fighting games of 1994

Neo-Geo's back catalog of fighting games will be re-released on CD

tech specs

Neo-Geo CD

CPU: 16bit 68000running at 12MHz, supported by 4MHz Z80

Graphics: Three simultaneous scrolling play fields, up to 380 hardware sprites and some hardware scaling support

Colors: 4,096 colors on-screen from a 16bit pallette

Memory: Neo Geo CD adds: 430K VRAM, 64K SRAM, 56Mbits DRAM

Sound: 13-channel Yamaha 2610 chip

Format: CD

41

PlayStation

With the most powerful gaming system
ever devised, Sony's grip on the world's
leisure time looks certain to tighten...

T he Sony PlayStation is currently
many insider's 'hot ticket,'
guaranteed to make a huge
impact since its November
launch in Japan. Sony has
reputedly invested $500 million
in the project — and the marketing hasn't even
started. The feeling is that Sony will spend
whatever it takes to make PlayStation a success.
Go figure...

PlayStation is Sony's second bite into the
videogame pie; in 1988, a collaboration with
Nintendo to develop a SNES compatible CD
drive failed to reach fruition. But the lure of huge
potential profits ensured that all R&D and
industry connections gleaned from this abortive
foray were kept on a back burner.

And now Sony is turning up the heat. One
insider at Sony Europe recently noted: "I don't
think it's an exaggeration to say that this is Sony's

PlayStation's joypad: note the four-
button d-pad and top buttons

most important launch ever. It won't fail." Sony is
predicting sales of 3 million hardware units in the
first 14 months in Japan alone. Ambitious? Maybe
not. It is already clear that Sony isn't going to
have to force its new baby onto a reluctant
market. The tech-specs and glimpses of software
so far unveiled have had both game players and
developers ("we got the development kit, started
fiddling around and in two weeks had something
like RadMobile up and running") begging for more.

Strong software support is essential to
success, and Sony is hoping for 15 titles to
accompany the Japanese launch — including three
titles from its own publishing stable. With the
addition of strong support from Namco, Konami,
and Capcom (all are planning arcade cabinets
utilizing PlayStation technology), and the
acquisition of UK-based developers, Psygnosis,
Sony promises to provide not just the chips, but
also the salsa.

Sony isn't saying how many titles it
hopes to have in time for a US launch in the third
quarter of 1995, but instead points to the 400
developers and publishers signed up as
PlayStation licensees. A software avalanche seems
guaranteed, with one major coup already secured
— when coin-op kings Williams announced that it

tech specs

PlayStation

CPU: R3000A 32bit RISC chip @ 33MHz
3D Geometry Engine (High-speed matrix
calculator): Clearing capacity: 66 MIPS
1.5 million flat-shaded polygons per sec.
500,000 texture-mapped and
light-sourced polygons per sec.
Data Engine: Clearing capacity: 80 MIPS
Sound: ADPCM, 24 channels
Graphics: 16.7 million colors
Resolution: 256x224-640x480
4,000 8x8 pixel sprites with individual
scaling and rotation
Memory: Main RAM — 16 Mbits
    VRAM — 8 Mbits
    Sound RAM — 4 Mbits
    CD-ROM buffer — 256K
    Operating System ROM — 4 Mbits
    RAM cards for data saving

Motor Toon
Grand Prix,
a racer
running at
60fps

has signed a deal giving Sony the exclusive home console rights to *Mortal Kombat III*. Both the arcade version and PlayStation CD should be launched next spring.

Snatching this sure-fire crowd-pleaser from under the nose of Nintendo is indicative of both Sony's bullish plans, and the eagerness of the industry to do business with the company. Nintendo had previously signed a broad alliance with Williams — including the joint production of *Cruis'n USA* and *Killer Instinct* — that seemed set to fuel Ultra 64's progress with a string of coin-op hits. Although this deal remains in place and Nintendo will be publishing some Williams games exclusively on Ultra — *MK3* isn't one of them.

An MPEG-compatible, Video-CD peripheral to be sold separately at very low cost is currently being considered by the firm, perhaps as a nod toward multimedia ambitions in the future (certainly Sony's got the intellectually-copyrighted connections) or just to keep up with the competition. Either way, this will complement the innovative joypads and the steering wheel peripheral planned for launch with PlayStation *Ridge Racer*.

So what's it going to cost?

As **NEXT Generation** goes to press, there's no fixed news. It will certainly be under $0,000 yen ($325), but the rumor is that it could be considerably lower. Sony has pulled off pricing surprises in consumer electronics before, and a US price of under $250 can't be ruled out. Sega and Nintendo execs will have been trembling in their boots as rumors of Sony's willingness to "stand a $100 loss on each hardware unit" (the company will make it all back on software sales) started circulating last month. Games look set to sell at around $40-50.

although how financially attractive third party licensing and manufacturing deals will be (huge sales projections aside) remains to be seen.

There are a couple of interesting extra features currently in the PlayStation pipeline: I) Its potential for multiplayer machine link-ups; the base unit will come complete with a serial lead enabling it to be connected to another machine (there are also plans for an adaptor that will enable up to eight machines to be linked) — essential for such games as Namco's *CyberSled* or, indeed, *Ridge Racer*, and 2) there will also be plug-in RAM cards on which players can save game scores and data.

It's hard to overestimate the amount of grass roots support PlayStation has in the development community. Whether this is founded on considered opinion, a desire to work with anyone but Sega or Nintendo (although there's no evidence that Sony will be any less rigid in quality assurance or third party licensing deals) or simply an excitement born of playing with any hot new toy, is unknown. But it is as near to an accurate barometer of who the smart money is on as anything else.

Those who would talk down PlayStation point to Sony's lack of experience in the game industry and an apparant blasé attitude to the need for quality software (the first Sony Imagesoft products were dreadful, and they haven't set the movie world alight yet either).

But all in all, a very, very impressive package. Just don't mention Betamax.

LAUNCH DATES: Japan, November '94, US and Europe — September '95

PRICE: As **NEXT Generation** went to press, Sony was in a stand-off with Sega, neither one wishing to be the first to announce the Japanese price for their next machines. PlayStation could eventually hit the US at $250-$300 or maybe even less

..Sony promises to provide not just the chips, but also the salsa.

Ridge Racer, eclipsed by Daytona and Namco's own Ace Driver, but still great

Toshinden, a 3D fighting game from Takara, is set to take on Virtua Fighter

CyberSled from Namco should take advantage of Sony's multiplayer link

To accompany Ridge Racer for PlayStation, Namco has designed a custom controller with a revolutionary twisting control joint. Available separately

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Saturn

Amid rumors of a back-to-the-drawing board redesign, Sega keeps its 32bit cards close to its chest

Although the machine is due in Japan this holiday season, Saturn remains shrouded in mystery and Sega of America remains strangely muted on the subject (although as any car dealer will explain "you don't advertise '95 models while you've got a showroom full of '94," and right now Sega claims its focus is solely on 32X).

So far it is mainly other people who're doing the talking. What they are saying is that Sega has spent the last nine months or so playing catch-up with Sony after a publisher-friend tipped Sega off about the power of PlayStation. New specs and development tools only recently arrived with third parties, superseding Sega's original description of the project. The main difference between them is apparently the addition of more dedicated processors taking work away from the two CPUs.

Certainly, the original Saturn technology was old. Commenting on the US launch of 3DO in

1993, Sega of America President Tom Kalinske revealed that "we have a more powerful machine already waiting in the wings, but the time's not right yet." But these last minute improvements — while no doubt improving Saturn's capabilities — may mean a problem with initial software support either being thin on the ground, or not showing Saturn's true potential.

This is thought to be the issue at the heart of an intense debate within Sega. There are also reports of debate about when Saturn should be launched. While a spring '95 launch date was suggested in the US, Kalinske is now understood to be pushing Saturn's arrival to the latter half of the year. At that time, Sega will supposedly be awaiting stronger software support while relying on 32X to keep gamers excited. There is also a strong rumor that the Saturn that appears in the US and Europe will actually be an enhanced version of the machine that is about to hit Japan.

Sources close to Sega, however, insist that there will be no major overhaul and that any

tech specs

Saturn

CPU: Two Hitachi SH2 32bit RISC chips running at 27MHz/50 MIPS

Co-processing: Hitachi SH1, 24bit DSP, Motorola 68000, video processor

Memory: 36 Mbits

Color: A true 16.7 million color palette

Graphics: 900,000 polygons/sec; Gouraud shading, texture mapping. Custom sprites and scrolling engine; scaling and rotation

Sound: 16bit 68EC000, PCM 32 channels, FM eight channels

Format: CD (300K/sec)

It is thought that Sega may offer MPEG compatibility as an add-on soon after launch

Saturn games in development (clockwise, from top left): *Race Drivin'* from Tengen, Sega's own *Panzer Dragoon*, *Shinobi* and finally *Gale Racer*

Virtua Fighter — read the exclusive NEXT Generation report on Sega's prime fighter on page 66
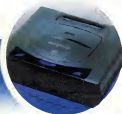
changes will amount to no more that "a bit of tweaking" to boost Saturn's ability to handle polygons — an area where Saturn ("inspired" by Sega's AM1 arcade board) is already strong.

Indeed, the most impressive software will initially come from Sega's conversions of its own coin-op titles such as *Virtuo Fighting* and *Daytona USA Yu Suzuki* and the AM2 development team are very much Saturn's ace in the hole. And because Saturn supposedly shares some of the same technology that Sega's arcade machines use, the firm is hot to promote the idea that what you can play in the arcade today, you will be playing at home on Saturn, tomorrow. But don't kid yourself, the *Daytona USA* seen in the arcade is leaps ahead in terms of processing power, in comparison to the stripped down Saturn.

There will, however, be a Saturn version of the Sonic coin-op. Some original work aimed specifically at Saturn is also under way. One title, *Clockwork Knight*, has been in development for more than a year and is set to be a flagship game for the format. There is very little word from third parties on Saturn. This is probably due to the late arrival of development tools and inevitable confusion over the possibility of Mark 2, even before the launch of Mark 1.

Another interesting feature of the whole Saturn project is The Sega Channel — Sega's interactive TV, play-by-cable system. Currently on test in 12 sites in the US and Japan, and due for national opening "sometime in December." The Sega Channel is a joint venture between Sega,

Time Warner and TCI, the cable company. It's widely believed that the Channel's games-on-demand, multi-user gaming, and preview functions could well revolutionize gaming and push Saturn to the top of the heap.

It's all about connections.

If all this sounds pessimistic, then it could simply be through a lack of reliable information. Whatever Sega has nailed down for Saturn in terms of a US release, it's keeping the information firmly hidden in the shadow of 32X. But with *Virtua Fighters*, *Virtua Racing*, *Wing Wars*, *Desert Tank*, *Daytona Racing* and *Virtua Cop* all available for straightforward (if not automatic)

> **There are also reports of debate about when Saturn should be launched in the various territories.**

conversion, Saturn is not lacking a respectable software library. And these guys are Sega, it's not like they're lacking the knowledge or the experience to make this happen.

More will be known after the Japanese launch of Saturn this holiday season. Read the full report in next month's NEXT Generation.

LAUNCH: Japan launch due in the holiday season; no firm news on US or European launches

PRICE: Again, no official word yet. In Japan it is expected to launch at a $400 yen equivalent

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Ultra 64

Nintendo's joint venture with Silicon
Graphics yields plans for a 64bit console
that could be ahead of its time...

S cheduled for a September 1995
debut (in both Japan and the
US), Nintendo's 64bit console
will probably be the last to
enter the market. But the firm
is determined it will arrive with
enough impact to wipe out any lead that Sega and
Sony might build. So is history set to repeat itself
as Nintendo once more misses the boat (the
16bit SNES never got close to catching up with
the first-out-the-blocks Genesis), or is Nintendo
simply refusing to be rushed?

The problem is price. Nintendo has
promised to bring Ultra 64 in under $250
($249.99, anyone?), but this will be difficult. SGI's
'Indy' Workstation (the heart of Ultra 64) retailed
for $6,500 at the announcement of "Project
Reality" (as the joint venture was dubbed), and
economies of scale aren't limitless. Already a CD
drive has been sacrificed — "sticking to cartridges
reduces the price by at least $150" — comments
Peter Main, Nintendo of America's sales and
marketing director. But what else need be left
behind as the dream machine is stripped?

Of course, Nintendo claims it prefers
cartridges anyway. But a CD drive for the Ultra
64 looks almost certain for launching after the
arrival of the base unit — although probably not

before the 1995 holiday season. Main claims that:
"Nintendo certainly has not turned its back on
CDs. We've already done a lot of work in that
area, but we don't believe that, as yet, the public
has been convinced CDs can deliver the sort of
games that they want.

"Ultra 64 has been designed to allow for a
CD add-on and we will make a move when CD
fulfills one of two criteria: Either we can deliver a
drive at the right price — which plays games at
the right speed — or there is a demand for
products that simply don't require speed."

There you have it.

Main also revealed that any Ultra 64 CD
drive would probably come with a price tag
of around $150.

Ultra 64 arcade cabinets have already
been launched under the Midway label: Cruis'n
USA and Killer Instinct are now on the streets.
Nintendo insists that home versions will be
"pixel-perfect" replicas, the company added that
in the case of Cruis'n, the console version will
actually be better than the arcade game as full
Ultra 64 tech-specs weren't available when work
started (a Williams 32bit board was used in the
absence of a completed 64bit Nintendo setup).

In fact, there's controversy as to if there's
any similarity at all between the innards of these
Williams coin-ops and the final Ultra 64
hardware. But at the very least, there are two
solid game designs in place for which Nintendo
has exclusive rights.

So far, only three third party companies have
signed up other than Williams — top developers
DMA, Rare, and leading SNES publisher Acclaim.
Two more will be announced before year's end.
Nintendo claims the initial software line-up "will

tech specs

Ultra 64
CPU: 64bit R4200 MIPS RISC processor
running at 100MHz+

Graphics: Real time anti-aliased texture-
mapping of 100,000 polygons per second,
true colors from palette of 16.7 million

Display: High-res HDTV

Sound: CD-quality

Storage: Cartridges, at least 100 Mbit
capacity (although initially the largest
will probably be 32 Meg)

Silicon Graphics technology provides not only the hardware for Ultra 64, but also the software design

Killer Instinct, the arcade smash of the holidays, but hardly the "quantum leap in gameplaying" promised

emphasize quality, not quantity." Final development tools, available in January, will herald additions to the list of elite firms that have been 'in' on Ultra from the ground floor. But even then, there won't be an avalanche of third parties.

"We're not looking for 25 good titles, we're looking for a handful of killer, breakthrough games, each one having no parallel in anything that has gone before," says Peter Main. "Success in the next generation is based on delivering a quantum leap in gameplaying, not just horsepower in hardware."

Ironical then, is the news that the only titles confirmed for the launch of Ultra 64 are Cruis'n and Killer Instinct — a driving game and a fighting game, with plenty of parallels to lots of games before. It is known, however, that Rare has already started work on Donkey Kong Country 2 and that this may go straight and exclusively to Ultra rather than the SNES. Meanwhile, Nintendo Japan's Shigeru Miyamoto (the creator of Mario

> ...Nintendo is claiming that carts are not an outmoded, overpriced storage method...

and creative force behind StarFox, DKC and SuperMario carts) is rumored to be busy on a 64bit game starring some Brooklyn plumber. He's also been quoted as having a desire to work on a version of Pilot Wings for Ultra 64, and now news reaches us that his wish has been fulfilled.

Definitely one to look forward to, as long as it doesn't result in having to wait longer for a new Mario game...

The average size of the first batch of carts will be 24-32 Mbits, although Nintendo is claiming that through the compression technology in the hardware, they will contain the equivalent of 100 Mbits of gaming. Whether this technology will also enable third party publishers to develop for the Ultra 64 as profitably as the CD-based systems remains to be seen; it's worth remembering that a CD costs less than $1 to manufacture, a cartridge costs well over $20. Either way, with Nintendo sticking to its guns and claiming that carts are not an outmoded, overpriced storage method in what

seems to be the 'CD age,' Ultra 64 games will cost roughly the same as current SNES titles, $50-70.

When we find stoplights in Saturn's Daytona and PlayStation's Ridge Racer as the result of disc scanning, we'll know Nintendo was right...

LAUNCH DATES:
Japan — Sep '95
US — Sep '95
Europe — Nov '95

PRICE: The official word from Nintendo yet is that Ultra 64 will be under $250

Rare's Killer Instinct — an exceptional arcade fighter, coming to Ultra 64

Williams' Cruis'n USA is the OutRun follow-up Sega should have done

Nintendo insiders have revealed that Mario's 64bit debut is in production

Controversy surrounds how much the innards of Cruis'n USA resembles what will be the guts of Ultra 64, but the game itself is unarguably a winner

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3DO

Trip Hawkins' dream machine is here, it's now — but can 3DO compete against the Japanese giants?

With a poor start in the US, a reasonable start in Japan, and an indifferent start in Europe, 3DO has so far failed to live up to its prelaunch hype.

Then again, that may not be entirely 3DO's fault. The hype was incredible and not all of the firm's own making. Looking back, it's plain to see that everyone got far too excited and expected far too much from what was the first glimpse of life beyond the Genesis/SNES duopoly. Such is the price of pioneering, 3DO's CEO Trip Hawkins would no doubt say.

Now the tide is turning. A series of price cuts, along with a range of software growing in quantity and quality (spearheaded by Electronic Arts' Road Rash and FIFA International Soccer, some encouraging projects from Crystal Dynamics and the morale-boosting — even if only in a "look, we can do it" kinda way — completion of Capcom's Super Street Fighter 2 Turbo), have given the format a more competitive edge. The machine now sells for $399, half of its original $799 launch price. In Japan, the current yen price converts closer to $300. A lot more realistic.

This holiday there will be around 75 titles available for 3DO, the vast majority of which are games. And with nine more months having the market largely to itself — before the Japanese

giants close for the kill — 3DO is looking at a big opportunity to anchor itself for the storm ahead. (Read **NEXT Generation's** exclusive interview with 3DO CEO Trip Hawkins on Page 6.)

3DO puts its worldwide installed base at around 200,000, but refuses to break the figure down into territories. The firm claims that there are 800 development systems in the field, that

Super Street Fighter 2 Turbo — a familiar bench-mark by which gamers can evaluate 3DO's performance

approximately 250 projects are in development, and that around 100 new titles will arrive in '95. Virtually all the major publishers in the world have now signed up as licensees. The notable exception is Acclaim, which still has to be convinced about 3DO's mass market potential. Just the one black sheep then, but a fairly significant one — and perhaps indicative of just how far 3DO has to go to reach mass-market status.

The November add-on MPEG cart should open up the Video CD library to the format. The peripheral will sell for $249. Meanwhile, more hardware brands are on the way. In the US, Panasonic's model was joined by machines from Creative Labs in late October and

The PowerPC chip, heart and soul of 1995's M2 add-on for 3DO, is the prime weapon in Trip Hawkins' fight against Sony, Sega and Nintendo

Three 3DO machines with three separate badges from three different manufacturers will soon appear in stores. The 3DO Company enables independent manufacturers to license 3DO technology, the result will be either be disastrous confusion, or healthy price wars. Only time will tell...

Goldstar in early November. Neither has announced pricing details yet. Sanyo has already released a unit in Japan but won't hit the US market until next year. Samsung and Toshiba also have plans for 3DO players but have yet to release any details.

Almost everyone is hoping for a price war, especially 3DO.

Next autumn, the format will be boosted by the arrival of a plug-in accelerator called M2 (formerly known by its codename 'Bulldog'). Developed in conjunction with IBM, Motorola and Matsushita, the M2 is built around a customized 64bit PowerPC chip. It has been designed to enhance 3DO's polygon processing power and, the firm claims, will make 3DO about five times more powerful than Sony's PlayStation. Ambitious words indeed.

There is no word on price yet, although Trip Hawkins has promised that it will be "competitive." Industry pundits expect M2 to arrive at around $150 — any more may simply be unpalatable to the installed base of 3DO users.

M2 will be initially available as a 3DO peripheral and the range of M2-specific software (that won't run on a standard 3DO without the add-on) will be limited. An all-in-one machine will be offered during '96 and will run alongside the current 3DO which will, at that point, be selling at a lower price as an entry level option.

That's if 3DO lasts as a serious contender.

Many game developers are looking at 3DO's performance this holiday season as a make-or-break decision time for further development. And already, some publishers have expressed dissatisfaction with their returns on expensive development investments (32bit multimedia titles featuring FMV, more labor-intensive graphics and development retooling doesn't come cheap).

But let's not underestimate 3DO's big trump cards: 1) it's here now; 2) we know exactly how much it costs; 3) some great games are already on the shelves. An insider offered: "We always said how important our 18-month headstart was, and now you're seeing that. Of course people came after us saying 'we're going to do something better,' but as they finally get to market, we come back in right on their heels dropping the next thing that is so far in front of them that suddenly they're two years behind again."

Everyone else is still just packing vaporware, and we know how reliable that is.

LAUNCH: Creative Labs, late October, Goldstar, early November. Sanyo and probably Toshiba and Samsung in '95. M2 accelerator due in autumn '95

PRICE: Currently the price is $399 but with multiple brands on the way and economies of scale kicking in, expect future cuts

Everyone's hoping for a price war, especially 3DO.

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"Upon what can such an outrageous claim be based?" you gasp!

Unadulterated chest beating here.

- Producers of the biggest selling entertainment CD ROM of all time - Sewer Shark (oh, the pungent smell of success!).
- First to produce continuously interactive, 100% full-motion video!
- All our games put players in the game - first person P.O.V. - and...
- ...Contain 100% original footage shot by fancy Hollywood directors, to the accompaniment of totally original music!
- Inventors of InstaSwitch®, the instant response video technology! And...
- ...DigiChrome® - for the most dazzling video the industry has ever seen!
- First and only game company to sign agreements with both SAG and DGA!
- Producers of five new games this Christmas, with a never ending stream of hit titles to follow in '95 and beyond!
- Etc., etc. - it just goes on and on and on...

Slam City with Scottie Pippen
This ain't no candy-colored cartoon, but live, in-your-face streetball. Earn enough respect and you'll go one-on-one with the Dream Teamer himself.

Corpse Killer
How do you kill what's already dead? Figure it out or your worst nightmare will come horribly true.

Supreme Warrior
The Grandmaster of all fighting games. Punch, block and kick your way to the ultimate interactive Kung Fu battle.

Kids On Site
Through the wonders of technology, kids get to operate mechanical monsters! Proven to keep little rug rats busy for days.

What's My Story?
Children get to tell neat stories in full-motion video and insist that you watch them over and over and over...

Night Trap
So controversial the industry had to create a ratings board. A blood-curdling, interactive, horror movie and you're the star.

So remember:
Video games ain't goin' nowhere unless we say so! Thank you for your attention.

Digital Pictures

When Movie-Makers Make Games, Everything Else Is Just Cartoons.

THE VIOLENCE TAPES

...After the media's feeding frenzy of 1994, what is the future for violence in interactive entertainment? Forget the senators, forget the press releases. Let's cut to the chase. Here in one virtual room are four of the developers who will shape the future of this controversial genre...

Tom Zito (TZ), *Night Trap*
President, Digital Pictures

Gilbert Austin (GA), *Harvester*
Writer, Designer & President, Maelstrom

Jay Wilbur (JW), *Doom*
Business Manager, Id Software

Leif Marwede (LM), *Blood Storm*
Project Manager, Incredible Technologies

NG: Each of you have achieved considerable attention with games that have — in different ways — pushed the envelope of violent content in videogames. How much of this attention is due purely to the game's violence and how much the interest this generates?

TZ: *Night Trap* was probably more successful than it should have been given how long ago we made it (1987) and how basic the level of gameplaying really is. It became a kind of lightning rod. It had been on sale for more than a full year before Senator (Joseph) Lieberman began his attack, and certainly the sales of the product accelerated tremendously during the period when it was almost impossible to turn the TV on at night and not see a 10-second clip from *Night Trap.*

JW: *Doom* was successful because all of the pieces of the puzzle were in place, and the violence is an important part of this puzzle.

LM: The violence and blood in *Blood Storm* is a great attention grabber: the color red is a big flag, like stoplights and stop signs. And, of course, you do want something visually big to happen when something strategic changes on screen.

GA: Sure it will be an element in the success of.

debati**ng**

"A games designer wants to barrage the players' senses"

DOOM
Publisher: Id Software
Format: PC, 32X, Jaguar
Release: Out Now
The shooting frenzy that spawned a thousand imitators, and gave game designers reason to think that there's life beyond the *SF2/Mortal Kombat* genre. The attacks are continuous, the screeching sound effects chill to the bone, and the violence unceasing. And Id's innovative shareware distribution ensures that the original PC version of *Doom* must come second only to *Tetris* in terms of penetration into the hearts, minds and unregistered hard drives of gameplayers everywhere.

Harvester — publicity is key to the success of any product. If it's not a good game then no amount of hype will help it. But due to the nature of the game — although it wasn't conceived for this purpose — it's a happy coincidence for the marketing department that there's been enough in this debate in the media about violence at this time.

NG: What led you to create this type of game?

TX: The origin of *Night Trap* was that I had been negotiating with Hawline Clinons to do an interactive version of *Nightmare on Elm Street*. We knew we wanted to do some sort of teenage-slasher-horror movie kind of game that would clearly appeal to the demographic we were after with an interactive TV system that we were developing. But at the last minute, the deal fell apart, so *Night Trap* was born.

JW: Id makes the games we want to play. It's exciting to be in the *Doom* environment.

GA: I had free reign to do what I wanted, so I chose something original. I asked myself what hasn't been done very well before and the answer is horror.

NG: So how is the controlled use of surprise, horror, and suspense useful in creating an immersive and engaging game environment?

TX: In the most basic sense. If I'm in a house and I can go anywhere in that house at any time, then I have to have something to motivate me to move around the house. Little kids love it when their parents go out because they can look in their parents' drawers — it's a natural curiosity. Now, as a storyteller, I have to provide a motive for gameplayers to do a similar thing.

And one of the classic movie techniques of motivating people to care about characters is to present a very real threat to the characters. So we created an environment in which you had to go in every room because if you don't catch these bad guys, they might hurt somebody.

LM: In *Blood Storm*, the violence is part of the game strategy. You can cut off arms and heads and then keep on fighting, so sometimes you do want to deliberately aim for, say, someone's weapon arm or their legs. Your opponent then has to change his or her approach as their game abilities change.

A game designer wants to hit the player in every way he can and barrage their senses when they do something good. And in fighting games, it would seem that lots of blood is the way to go about doing this.

JW: Of course, surprise and shock is important. In *Doom*, when you walk into a fully lit room and you see a rocket launcher right in front of you, you desire it. You grab it easily and you think "great!" — but then the door slams shut, the lights go out, and creatures flood you from all sides. Now that turns the mob on the adrenaline dial up a notch. And so it's that perceived danger that makes *Doom* such a fun game to play.

GA: A game is a very interactive experience — if it's done correctly — and that puts certain limitations on designers. Playing a horror game is a whole different experience from watching a horror movie. A movie director can orchestrate all sorts of images and sequence to startle the viewer because it's linear, it's like a roller coaster: you strap the viewer in and take him from point A to point B showing them exactly what you want them to see along the way. In a game, you can't manipulate a player in the same way. Hence, you surrender some control over the dynamics of the situation so you have to try other devices. So if you can't really scare someone in a horror game, then what you can do is disturb them — and that's a different

The idea of stirring controversy to sell even product is hardly new. *Dracula*, a Commodore 64 game called from C64, released in Europe in 1987 holds the dubious honor of being the first game to come with a cinema-style "15" certificate (supposedly only players of 15 years or older should play the game). Dracula was closely followed by *Wolfman*, which came branded with an — even harsher — "18" certificate. The ratings were self-imposed partially because of the game's primitive, gory graphics, but largely as a marketing exercise to mask what was essentially a remarkably tedious graphic adventure: Marketing! Plus ça change...

BLOOD STORM
Publisher: Incredible Technologies
Format: Arcade
Release: Out Now
Coming to a home console near you, and soon, *Blood Storm* from Incredible Technologies is the single most bloody game in the arcades. There is a legitimate(ish) justification for the unstoppable violence however, and that is that lopping off people's limbs is all part of the strategy — you got it, players can continue fighting without weapons, arms and even legs. Nice.

"America is the only country that likes all this gore and blood in games"

kind of fear — by presenting them certain images that horrify, presenting ironic situations which are uncomfortable or disturbing.

NG: Did you set out to scare the player?

LM: Never. We set out to excite the player.

GA: No, I don't think you can scare someone on a PC. I want to horrify the player into a state of unease, as opposed to simply making him jump in a movie theater.

NG: So Gilbert, can a player avoid this feeling of unease as a reward of skillful play?

GA: No, because this atmosphere of horror is a cumulative effect of everything in the game.

NG: Could you have achieved such a compelling game environment without the violent images?

TS: I don't know the answer to that. Could Oliver Stone have made *Natural Born Killers* less violent? Sure he could have. But would it have worked? I don't know. JW: No, because then there would be an essential part of *Doom*'s makeup missing. We set out to make a perfect game; and if this perfect game involved you hopping over flowers in an effort to give a daisy to a girl at the other end, then fine. If, however, it involves you picking up a shotgun, sticking it in some bad guy's mouth and blowing his brains out of the back of his head, then so be it.

LM: Oh yeah. From the start, that was part of the plan. If you're just selling a game to the American market, then you need lots of blood. Fine, but if you want to sell a game internationally (to countries like Germany or Japan), then these guys don't want blood. So *Blood Storm* comes with dip-switches to turn all the blood off, and so, of course, it has to perform in both modes. I mean, I know this makes American kids look bad, but we're pretty much the only country that likes all this blood and gore in our games.

CM: No, not at all. *Harvester* would fall to pieces without there elements; the whole concept requires horror and violence and the game would not exist without it. Fictional horror fascinates because — like all entertainment — there's a level of voyeurism. It enables you to live a terrible situation without having to deal with the consequences afterward; it enables you to take a walk on the wild side.

NG: In the development phase, did you consider anything to be 'too sick'?

TS: As part of the *Nightmare on Elm Street Series*, we acknowledged there was a level of blood and violence that was going too far. By the same token, we felt that if we completely eliminated it, the player who goes through all the buildup would feel totally cheated.

LM: Look at it this way; in *Blood Storm* you can crawl around with no legs dragging your intestines behind you. So no, there's nothing that we didn't put in. But there's an awful lot of black comedy in there, it's like the Monty Python–Black Knight scene, it features animated characters and cartoon violence — it's definitely not real.

GA: No, there wasn't anything I shied away from [laughs] *Harvester* runs the gamut of disgusting human behavior and there are no sacred cows I considered untouchable. I've got everything from religion to children getting abducted and murdered. But I wanted to do a real horror game, not just another haunted house. And to disturb a player in these jaded times, I think you really have to delve into some dark material. This is why there haven't been — in my opinion — many good horror games. It's because big companies like Sierra and EA are run by corporate boards and guys in suits,

debating

"I've been a newspaper reporter and I've *seen* real decapitated people"

and to try and get something truly fringe past these people is virtually impossible: they're forever thinking "what are people going to think?" and "what if we get bad publicity?" so they tone it down and the baby ends up being thrown out with the bathwater.

JW: We have established that we consider too far: medical photographs of dismembered bodies, for example. But let me tell you, were we able to take those photographs, work them into the game and make them an equally important part of the game than it would have contributed and we would have used them.

NG: So day, in the future, Id wouldn't draw the line at using any image on a moral standpoint, but look at it purely in terms of what it can add to gameplay?

JW: It's likely, yes.

NG: Will the new ratings effect how you produce games?

JW: We make the games we want to play, and then let the ratings fall where they will.

GA: If I wanted to dabble with horror again, I wouldn't compromise the design for the sake of a rating, no.

LM: No, no way.

NG: Just to set the record straight: Do you believe that exposure to violence (in the form of movies, comic books or videogames) leads to a higher propensity for violence in the watcher/player?

TS: I'm not a psychologist, but I believe that if you're brought up in a stable environment with a lot of love, then it doesn't make a whole lot of difference what you get exposed to. If not, I think lots of things potentially could take the place of whatever it is you are looking to your parents for and become a kind of influencing factor in your life. But it's preposterous to claim that because a kid plays a violent videogame, he's going to turn into a violent person.

JW: Playing videogames is a great release of violence, and this is a belief that is echoed back to me by countless experts in the field. I would ask the people who claim that violence is caused by videogames to explain the Crusades, one of the most violent periods in history, and yet these people did not have videogames. So what made them do it? Their entertainment was the Bible.

LM: There are a lot worse things that kids are exposed to, like "Cops" and the TV news. I think kids are barraged by a lot more real violence than any pretend violence they might see in an arcade. Besides, I think videogames are good for a lot of kids. It's good for reaction times, it trains your mind to think faster and they are great training for confrontations — such as, say, a big baseball game — in real life. It gives that spirit of competition.

GA: It's complete bullshit. I just want to ask these guys to look at all the violence you see in Haiti, and yet how many of them have Nintendo decks? How many watch the "A-Team" on TV? And yet they are happy to show all this real life violence on the TV news because they justify it by saying that it's real, therefore it's significant. But I think ideas are significant also, and should be free for exploration.

NG: How about the idea that what you are shocked by in real life is a function of what you have been exposed to (for example, a nurse who works all day in an emergency room is less likely to be shocked by the sight of blood in a car wreck than an ordinary person). So, a player who has seen someone's head ripped off 100 times in Mortal Kombat is not going to be as shocked by it on the 101st time as he was the first time. Maybe this 'desensitization' in some way transfers to 'real life also?

TG: That's bullshit. I've been a newspaper reporter, I've seen decapitated people and I guarantee you that even if I'd played *Mortal Kombat* all my life it still would have shocked me.

JM: Get real, C'mon. What kind of idiot would think that? Get a life!

LH: Kids understand what a videogame is, and parents often don't give kids enough credit for this.

CS: Growing up, I watched all the Warner Brothers' cartoons, I watched genuinely dangerous things in the 'Three Stooges' shows. I saw movies like *Dirty Harry*, and I haven't committed a violent act probably since I was 15 years old in a school yard scuffle.

I know the difference between reality and fantasy, and I think most other people do too. OK, sure, if I see a hundred horror movies then it's going to take a seriously intense movie to gross me out, but that has nothing to do with how I react in real life.

MG: *Acknowledging the fact that there may be a link between what you see and what you do, do you think the risk for videogame players is higher because games are controlling what happens, instead of just watching it?*

LH: There's no difference.

JW: The only difference is that you'll probably be less stressed coming off a really good game.

TZ: I think the interactivity heightens the positive effect, because you now understand that there is a casual relationship between doing something and something happening.

JW [in response]**:** Absolutely. That's an excellent point.

GA: It would have to be a whole lot more realistic say, a totally immersive VR setup. But then I think there could be profound implications of interacting with fictional horror.

MG: *OK, and of subject: there's no proof either way. But ratings are a good thing, right?*

TZ: Yes, absolutely. I hate censorship, and I would strongly defend people's right to produce whatever they wanted, but we do need something to help parents decide what their kids should or shouldn't have.

JM: Absolutely. I'm a consumer, and so anything that gives me more information on which to base a purchase decision is a good thing.

LH: No, in as much as I don't think the people involved in the Congressional intervention really understand. To listen to those guys talk, you'd think that they don't even have a handle on what, say, the different home systems are.

GA: No, I have no objection to ratings as long as they aren't used to stifle creativity. We're going to voluntarily put a warning sticker on *Harvester*. But if ever a company denies funding for a game's development because (it) thinks an unfavorable ratings bracket could harm sales, then I think that's a passive form of censorship which I'd object very strenuously to.

JW: Does the huge popularity of *Doom*, the unprecedented excitement surrounding *Night Trap*, and the phenomenal success of *Mortal Kombat* suggest that there's a huge market for violent videogames that we've just scraped the surface of?

TZ: Fundamentally, in order to have a good videogame you have to have tremendous replay value. The novelty of violence will wear off. Besides, these things take a lot of money to make and so you've got to be sure it's going to appeal to a wide enough audience. I don't think enough people would find extremes palatable.

JW: There is a huge market for excellent games. All we have seen here is a series of great games that happen to include violence. Of course; there will always be

"to disturb a player in these jaded times you really have to delve into some dark material"

Of course, no violence discussion would be complete without mention of *Mortal Kombat* — despite the fact that Williams offers a blank "no comment" to any enquiries on the subject and the best Acclaim can offer is silky PR...

So what's the real deal here? Well, *Mortal Kombat II* is a great game, features solid gameplay, creative characters, more moves than you can shake a stuck at, and ... of course — buckets of blood. The original *Mortal Kombat*, however, achieved spectacular success (1993's biggest selling cartridge game) by virtue of the fact that — at the time — there wasn't much competition, the game characters wore digitised actors, and there were two new features: fatalities and blood by the gallon. Every game needs a hook, and this one could have caught a whale, Gore fever held found a home.

TS: All I know is that anything I can do to take TV out of the mode of being passive and into the mode of being active is worth doing. I am much more concerned about the passivity that gets induced by television than the risks of interacting with videogames.

JW: It's hard to say. Right now, when I play *Doom* I get an adrenalin rush, I get pumped, I get excited and it's difficult to see how I could get more into a game than this. At this point, I think I'm at the height.

LM: I agree, that's unrealistic.

GA: If the game was as convincing as real life, then yes, of course, 'it would have an effect. Unquestionably.

MG: What are the chances of this trend eventually resulting in damaging psychological or physiological effects upon the player, be it fainting, physical shock, or even post-dramatic stress disorder?

TS: Sure, there'll be a worst fight, you'll get your head chopped off, look down and see it looking up at you with a smile on its face. It's going to be so ridiculous you're going to laugh! It would be just like *Monty Python's The Holy Grail*.

GA: I disagree. If the brain believed it's dead then who knows what mental damage could be done?

MG: There's a lawsuit waiting to happen here: So what's the legal position regarding the game publishers' responsibility in this scenario? Are you insured against this?

JW: I go back to the Judas Priest case in which it was claimed that two people committed suicide after playing a song backwards. This was thrown out of court.

MG: In the quest for ultimate realism and excitement, how far is too far?

JW: Nothing is "too far," just whatever it takes to make a perfect game.

GA: I agree

MG: Given that elements of the retail trade have already begun to balk at stocking 'adult' titles, to what extent is the progress of the violent game regulated by what shops will or won't sell?

JW: I think a good game is a good game, and will he excepted by all channels; shareware and retail alike. Some obscure game in which the object is to do something really horrible might have to go underground.

GA: There's a very real danger that any game exploring the fringe wouldn't be allowed in these stores and so could be denied funding in the first place.

MG: Could we be looking at a breakaway, underground sub-industry for the more adventurous titles?

JW: I think one will pop up. But then, we have one already for pornography.

GA: For sure, but it could only exist if it was m0′i possible to make a living from doing it. And so I urge everyone out there to gay up for their shareware games because without the support of the buying public this system just can't operate — and it could be the future for games if the government continues to become more oppressive or the business community becomes faint of heart and these titles are pu'led from the stores

MG: Will you be developing further "horror" titles?

TS: Oh, we'll do another horror show, for sure.

JW: In the future we'll keep the same taste to *Doom*, for sure. But our main goal to is to increase the scope of multi-player options.

GA: Oh absolutely. If I find that in the future I have anything more to say — I love the games.

LM: Yes, sure. As long as they're fun, fighting games are still hot, we still enjoy making them, and the kids still love playing them.

MG: Tom, Jay, Leife, Gilbert — thank you

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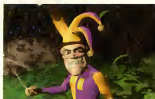
THE LEGEND OF
Kyrandia
BOOK 3: Malcolm's Revenge

THE KYRANDIA TRILOGY

ESPN BASEBALL TONIGHT — *versus* — [The competition]

WE HAVE STATS. → THEY HAVE STATS.

WE HAVE "3-D RENDERED" MAJOR LEAGUE BALLPARKS. → THEY HAVE STATS.

WE HAVE ALL THE MAJOR LEAGUE TEAMS, AND ALL THE MAJOR LEAGUE PLAYERS. → THEY HAVE ALL THE STATS.

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Virtua Fighter **Saturn** Ridge Racer **PlayStation** Daytona USA **Saturn** Clockwork Knight **Saturn** Gex **3DO** Fight For Life **Jaguar** Motor Toon Grand Prix **PlayStation** Virtua Fighter 2 **Arcade** Tama **Saturn**

NEXT GENERATION Premiere Issue

alphas

Exclusive previews of games that will shape the future

T his month gamers the world over will look to Japan to see the next generation of videogame consoles unveiled, so for this month's *finals* section our concentration is on the games that will make or break these new machines.

Over the coming months, *alphas* will profile games in development for all gaming formats including PC and CD-ROM. But for this month, the coverage is focused mainly on software for Sony's PlayStation and Sega's Saturn.

Both machines launched within a week of each other in late November, and right now the following games are those that showcase what each is capable of.

64 Motor Toon GP PLAYSTATION

Sony takes a Nintendo-inspired drive into the world of colorful, wacky racing

66 Virtua Fighter SATURN

Saturn's recreation of the ultimate arcade fighter nears completion

70 Namco PLAYSTATION
Ridge Racer/Tekken/Cyber Sled

An exclusive look behind the scenes at Namco's *Ridge Racer* development HQ

75 Tama SATURN

An adventurous and (if you will) 'ballsy' game from the makers of *Marble Madness*

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The ultimate arcade driving game is squeezed onto Saturn. Here's how it looks

81 Clockwork Knight SATURN

Back-to-the-toy-cupboard basics as Sega clocks in a brand new game hero

83 Toshinden PLAYSTATION

A *Virtua Fighter*-clone for PlayStation, Takara invites direct comparison to Saturn

85 Fight for Life JAGUAR

Can the Jaguar *really* handle its own 3D fighting game? Atari thinks so...

86 Gex 3DO

Crystal Dynamics creates a new "wise crackin'" (oh dear) character for 3DO

88 Virtua Fighter 2 Arcade

Texture-mapped polygons, Sega's AM2 board and 60fps. Get ready to rumble...

VIRTUA FIGHTER

FIGHT FOR LIFE

GEX

VIRTUA FIGHTER 2

CLOCKWORK KNIGHT

TOTAL

DAYTONA USA

RIDGE RACER

MOTOR TOON GP

TAMA

TOSHINDEN

Motor Toon
Grand Prix

Sony is kickstarting its new system with an in-house project that looks set to become an instant PlayStation classic

The first track, Coconut Island, includes palm trees, undulating green hills and pink hot-air balloons that rise steadily into the sky. Nintendo would love this game

This viewpoint demonstrates the PlayStation's capacity for rendering thousands of Gouraud-shaded polygons — all et an astonishing 60fps

Format:	**PlayStation**
Publisher:	**Sony Computer Entertainment**
Developer:	**In-house**
Release date:	**Dec (Japan)**
Origin:	**Japan**

Given that Sony intends the PlayStation to be a mass-market games machine supported by original software, *Motor Toon Grand Prix* (formerly *Poly Poly Circus GP*) is a powerful statement of purpose. On the surface, it has all the hallmarks of a cute, childish console game – the kind of thing you'd normally expect from Nintendo, in fact. But it's also a technical showcase for the PlayStation that will have jaws dropping and mouths watering.

At first glance (in other words, from still shots like these), the lack of texture mapping in *Motor Toon Grand Prix* is glaringly obvious – most of the scenery is made up of plain, Gouraud-shaded polygons with the occasional texture evident on trees, buildings and roadside signs. But it's only when the game is actually moving that its real graphical flair becomes apparent.

For a start, the frame rate is extremely brisk – it rarely drops below 60fps, which makes for exceptionally fluid movement throughout the game. In comparison, Nintendo's Super FX-assisted *Stunt Race FX* chugs along at a humble 12-15fps.

Another focus of attention is the variety of *Virtua Racing*-style viewpoints selectable during play. The transition between them is perfectly smooth, and each one provides a different perspective of the gameplay as well as delivering dazzling views.

"We've tried to make the driving sensation as realistic as possible, but without detracting from the enjoyment of the game"
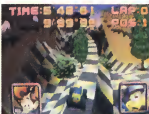
Motor Toon Grand Prix stars five different characters designed by renowned Japanese artist Sosamu Matsushita. Texture mapping provides detail on roadside buildings (above) and trees (top left), while shading — for the sake of increased speed — is used for the landscape

The Gulliver's House level includes some truly amazing undulating scenery – the cars actually twist and bend as they negotiate the obstacles

And then there's the game world itself. Rather than offering a rigidly defined path, Motor Toon Grand Prix enables the player to take different routes, venture off the track, or even drive recklessly towards oncoming traffic. One track even includes tubes tunneling into the ground – whether you go down them is up to you.

The project's director, Kazunori Yamauchi, claims that Motor Toon will transform the way we currently think about racing games: "We've tried to make the driving sensation as realistic as possible, but without detracting from the enjoyment of the game. Basically, we're not trying to fake reality – I'd rather create the sensation of handling a remote control car but with the kind of dynamics that you'd expect from a real car. The cars' suspensions actually work – we've attempted to simulate the dynamic forces as they go around corners."

Motor Toon Grand Prix is now approaching the final stages of development, but there are a great many more features to be added, including extra tracks, even more camera angles, a potentially awesome two-player link-up mode using a pair of televisions and, above all, lots of humor and personality.

From what NEXT Generation has seen, Motor Toon Grand Prix is the PlayStation's own distinctive fusion of Stunt Race FX and Virtua Racing. Don't be surprised if it ends up surpassing both.

Head to head

Motor Toon Grand Prix is believed to be the first game to take advantage of the PlayStation's link-up ability (although some doubts hang over the status of this PlayStation feature — as outlined in a **NEXT Generation** interview with Namco on page 70). But hopefully, with two PlayStations, two televisions, two copies of the game and a lead (that will probably come bundled with the machine) to connect the consoles via their communication ports, players have access to a two-player mode that should add immeasurably to the Motor Toon Grand Prix experience. Sony is also planning to release a multitap adaptor to enable the connection of up to eight PlayStations. Boasts a Tupperware party any day…

ng

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Virtua Fighter

Sega's polygon fighting game is
starting to take shape on the Saturn.
NEXT Generation gets technical
with developers AM2

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**In-house, AM2**
Release date:	**Dec (Japan)**
Origin:	**Japan**

The higher resolution of this
45%-complete version
(above) makes it notably
more impressive than the
lowres, low polygon demo
Sega exhibited at the Tokyo
Toy Show (right)

If there's one game
that oozes over-the-
shoulder appeal, it's
the arcade version of
Virtua Fighter. To
date, there's never
been a visually more exciting fighting
game, and Sega's main arcade division,
AM2, has spent the best part of four-
and-a-half months trying to coax all
the moves, graphics and playability of
the Model 1 arcade game onto Sega's
32bit Saturn machine.

At the 10% complete stage,
Saturn's *Virtua Fighter* naturally
looked crude and blocky. But as the
characters in the game were composed
of only 100 polygons compared to the
arcade's 2,000, this was no real
surprise. Now, however, things look very
different. The polygon count is slowly
creeping up and the solid yet slick look
of the arcade version is gradually
beginning to surface.

But it's not just a simple case of
getting a graphic artist to model
graphics with an increased number of

polygons. Unlike the Model 1 board,
the Saturn has no custom polygon
hardware, so the twin CPUs have to
handle all the processing burden.
Sega's legendary coin-op guru, Yu
Suzuki, who is heading the AM2 effort,
is currently working on an acceleration
program to bypass this bottleneck. He
explains: "In order to get over the
problem of the hardware difference
between Saturn and the Model 1
board, we're preparing a high-speed
program and improving the display
capability. When you try to program a
character with an increased number of
polygons, processing which took 1/30th
of a second can end up taking 1/15th
of a second. The more processes there
are, the slower it gets. We have to write
a program which can run in 1/30th
of a second even with a greater
number of polygons."

The quality
of the Saturn
graphics in the 45%-
complete version has
been greatly
improved by the
recent switch to a
higher resolution
(640x224 from
320x224). This
makes a total of 143,
360 pixels, which
brings the game
closer to the
resolution of the coin-
op — 190,464 pixels
at 496x384.

Wolf grapples the (usually) nimble Cage to the
floor. Saturn's *Virtua Fighter* will compete with
Ultra 64's *Killer Instinct*, PlayStation's *Toshinden*
and Jaguar's *Fight For Life* — it's the one-on-one
fighter that will show which system has the edge

66

It's possible
for the
Saturn
version to
achieve the
same effect
with 1,000
polygons that
the arcade
version
needs 1,500
to create

Despite the fact that the finished Saturn game will probably feature fewer polygons than the coin-op, it's likely that *Virtua Fighter* devotees will find it hard to tell the difference between the arcade original and the home version. This is only possible because of the Saturn's texture-mapping abilities. Put simply, Sega's Model 1 arcade board was nothing but a polygon generator. All the floors and characters in the game were constructed from polygons (although the backdrops were bitmaps), and minor details like facial expressions and the belts and hats of some of the characters were created by adding extra polygons.

The Saturn version, however, will be using texture mapping to provide such detail: The polygons that were used for the eyes, ears and mouths, for example, will be replaced with textures. So, in theory, the Saturn version could be just as convincing as its arcade counterpart even though it uses relatively few polygons.

In fact, Suzuki claims that it's possible for the Saturn version to achieve the same effect with 1,000 polygons than the arcade version needs 1,500 to create. One AM2 programmer even went so far as to suggest that "If 1,200 polygons are used for each character, the Saturn version will look more or less on a par with the arcade game." Suzuki's original task was to get 1,000 polygons running in the Saturn version. This objective was reached by the time the Tokyo Toy Show

Wolf is made up of 550 polygons, the arms ears 220. All 700 original arcade moves will be included in the home game

took place in June this year (although Sega admits that the demo seen by **NEXT Generation** at the show was the result of two weeks of rush work). Now, with the Saturn version making use of about 1,300 polygons in each scene (550 per character and 220 for the ground), Suzuki is hinting that it might eventually be possible for the Saturn characters to reach the magic 2,000 polygon mark.

Virtua Fighter hit Japanese shelves to coincide with Saturn's November launch. Count on **NEXT Generation** to be the first to report the news of the finished game. **ng**

Processing Punch

Although widely acclaimed for its graphical appeal, there's more to *Virtua Fighter* than meets the eye.

The fluid camera movements and jaw-dropping animation are created by means of high-speed processing. All the processing needed for each frame of *Virtua Fighter* — from the actual calculations to the point at which things happen on-screen — is completed in 1/30 of a second — 0.033 seconds or 33 milliseconds, then looped.

The "high-speed program" mentioned by Yu Suzuki (see left) is primarily concerned with minimizing the time that the CPU waits for the next process during the program looping. "We are working at a level where if we save one millisecond we can display 100 more polygons," says Suzuki.

For the Saturn version to accurately replicate the movement of the arcade, the machine must carry out 1 million operations every 1/30th of a second. For the record, one processing step on the Saturn takes 35 nanoseconds, or 35 thousand-millionths of a second. That's not long...

Saturn Virtua Fighter uses texture mapping to replicate some of the original character detail that was achieved simply by polygons in the Model 1 coin-op. Even at this early stage, Saturn's main contender looks good

67

tick

THERE NEVER SEEMS TO BE

tick

tick

tick

tick

ENOUGH TIME WHEN YOUR BRAIN IS

tick

tick

tick

tick

BEING EATEN BY A CYBER-VIRUS.

tick

ng alphas

Namco

Namco's console software development has traditionally slipstreamed its arcade technology. Now the company's support for the Sony PlayStation looks set to reverse the situation

"All aspects of the gameplay have been done and the graphics are now 70% complete"

Shigeru Yokohama, general manager, CG development on Namco's PlayStation version of Ridge Racer

Namco's Tokyo headquarters in Yaguchi, Ota-ku (above) features an information robot (top left) that points visitors in the right direction — receptionists watch out

Namco is destined to be a prolific source of software for Sony's PlayStation. A deal signed with Sony allows the coin-op specialist to produce product for the home machine as well as develop arcade machines using the PlayStation technology.

With Sony's machine now entering the home stretch, **NEXT Generation** visited Namco's HQ in Yaguchi, Ota-ku 20 minutes from downtown Tokyo) for a meeting with the R&D lab responsible for *Ridge Racer* and other PlayStation titles, and spent several hours quizzing five key staff, including the ever-helpful Youchi Haraguchi and Noby Kasahara.

When **NEXT Generation** was last at Namco, the conversion of *Ridge Racer* was still deep in the planning stages. Six months later, there are just a few weeks to go before the game is scheduled to be finished.

"We've spent 80% of the necessary development time," reveals Shigeru Yokohama, general manager of the CG development department. "The project manager keeps telling us it's not enough," he adds, laughing.

Six months to convert a sophisticated arcade game to a brand-new system using embryonic development hardware is a formidable task. Namco has a core team of seven programmers and graphic artists working on *Ridge Racer* but is also relying on a number of planning staff to complete the project.

"It's difficult to estimate just how complete the game is in percentage terms," shrugs Shigeru. "All aspects of the gameplay have been done and the graphics are now 70% complete. There are still small details to go in, like the girls at the beginning of the race — they've still to be designed — but most things are finished."

Roadside detail is practically identical to the arcade version. Of course, Namco gets all the best ad sites — there are Namco logos on all available surfaces

Although characteristically wary of giving away too much technical information about the conversion process — and the PlayStation's ability to replicate the coin-op — the *Ridge Racer* team was prepared to reveal some general details about the problems they encountered.

The graphics in *Ridge Racer* are 70% complete. Extra views (above and above left) should further boost its appeal

Note the *Rave War* legend on the car – a clever bit of marketing for Namco's upcoming fighting game *Tekken*

The coin-op

Ridge Racer uses Namco's System 22 realtime visual rendering system. This hardware relies on the 32bit Motorola CPU running at 25MHz and boasts digital signal processing (like *Virtua Racing* and *Daytona*). *Ridge Racer's* graphics run in an interlaced 640x480 mode using over 30,000 colors onscreen.

According to Namco, System 22 is more powerful than Sega's Model 2 board, with its 'TR3' chip capable of rendering 240,000 texture-mapped and (here's the difference) Gouraud-shaded polygons every second. That translates into an astonishing 400 million FLOPS (Floating point operations per second).

"The specifications of the two systems are entirely different," states Shigeru. "System 22 is used in the arcade version, and the PlayStation gives us less power to play with. The number of polygons onscreen caused us some problems, as did the PlayStation's CPU. There's also no anti-aliasing in the home version. We spent a lot of time refining the program on the PlayStation. As a result, it has ended up a lot bigger than the program code in the coin-op."

Judging from the pictures on these pages, the programmers (who, unlike Sega's *Daytona* team, are not part of the arcade division) are experiencing some difficulties achieving the arcade version's level of detail. But the preliminary results are extremely impressive considering that they represent just six months' work. And what really matters is that the game looks fantastic in motion. Just as **NEXT GENERATION** was going to press, it came into possession of a videotape showing the game moving, and can testify that these screenshots fail to

do justice to the quality of the high-speed action.

PlayStation *Ridge Racer* will include extra features not found in the coin-op. One improvement will be the addition of two different viewpoints, giving the player a total choice of three – this will no doubt be welcomed by *Virtua Racing*

devotees. A selection of 12 cars will also be incorporated.

All the standard arcade options will be retained, including automatic transmission, the time trial route and the ability to travel the opposite way around the circuit. The soundtracks in the game have been ported straight over onto the PlayStation sound hardware, and Namco is currently designing a steering accessory for the console to mimic the arcade experience as faithfully as possible. Rumor has it that this translates to a joypad held in both hands with a twisting central hinge – steering is achieved by twisting your grip as if you were wringing out a towel.

ng alphas

The soundtrack to *Ridge Racer* promises to give PlayStation's sound hardware a decent workout. Namco may offer a selection of tunes to choose from


One of the most impressive parts of the arcade game: the bridge section. The detail on the cliffs is the PlayStation version is faithful to the original, including the tight left corner thee the hairpin bend ahead

'With Sony, we can take the same percentage profit on each unit but sell the game at a much lower price'

One issue which has been discussed at length at Namco is the PlayStation's link-up capacity. It has now been confirmed that a link-up facility won't make it into *Ridge Racer*. According to Mr Yokohama, "Sony is a little bit behind on this particular aspect of development. We haven't seen the machine's link-up capabilities working yet, and we've no information about it. For this version of *Ridge Racer*, it won't be possible to play linked up." This is a shame, but it's one deficiency that Namco will surely address with a new release of the game (and is likely to remedy in a conversion of *Ridge Racer 2*).

Namco is still committed to releasing *Ridge Racer* to coincide with the arrival of the PlayStation. "The exact launch date is still not confirmed," section chief Noby Kasahara points out, "so it's hard to say when the game will be released." Presumably, there won't be too much sleep lost by the team in the unlikely event of the launch slipping to past December.

News that Namco will be pricing *Ridge Racer* at around ¥6,000 ($50) is very encouraging, given that a current wave of Super Famicom (SNES) software is hovering just under the ¥10,000 ($90) mark. Consumer sales manager Youchi Haraguchi explains that this is a direct result of Sony's lower licensing and manufacturing fees: "With Nintendo, the higher-memory ROM boards cost between ¥2,500 ($23) and ¥3,000 ($28). With Sony, the cost of a single game CD is closer to ¥1,000 ($9), so we can take the same mark up on each unit but sell the game at a much lower price."

No other versions of *Ridge Racer* are planned by Namco, although it's known that the company has a contract with Sega for Saturn development (3DO software was on the cards but now looks dubious). "We know the PlayStation well now and it's good hardware," explains Shigeru. "But we don't know the exact specifications of the Saturn yet, so it's difficult to say whether the game could be translated or not. Other new machines like the 3DO and 32X simply aren't powerful enough to do justice to the game."

To the inevitable chagrin of the millions of loyal Japanese Super Famicom owners, the chances of a 16bit version appearing are at about zero.

Another major project

currently being worked on at Namco is *Tekken* (the game will probably be renamed *Rave War* for its US release). Running on the new System 11 board co-developed by
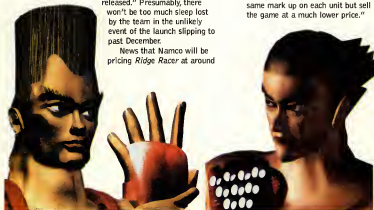
This is the only illustrative material so far available for *Tekken*: Namco's top secret fighting game. More details should be available — possibly including a new name — later in '95. NEXT Generation will bring you the news

The two-player link-up won't make it to the final version of *Ridge Racer*. Sony hasn't managed to sort the final system details. *Ridge Racer 2*, however, may come up with the multiplayer goods

Namco and SCE.System, this beat 'em up is one of the most significant developments at Namco – System 11 is essentially a PlayStation chipset optimized for the arcade.

"It's not exactly the same hardware as the home system," admits Shigeru, "but it's based on the same system, rather like the Titan board is based on the Saturn. Because the game has been written on the PlayStation, no conversion will be necessary – it can be ported straight over."

It's thought that one of the original AM2 designers of *Virtua Fighter* is playing a major role in *Tekken*, following Namco's recent acquisition of designers from Sega.

With texture-mapped polygon fighters à la *VF2* and exceptionally fluid movement, *Tekken* wowed the crowds at the recent JAMMA show. Although Namco officials did its best to deter photographers, *Tekken/Rave War* is expected to appear sometime next year.

Cyber Sled, another PlayStation conversion in the works at Namco, is just "one month behind *Ridge Racer*"; and *Starblade* are scheduled for release in December and January respectively. "We'd like to be able to release one game a month for the system," states Youchi.

As for *Ridge Racer*, hopes at Namco remain high. "We're hoping to sell one copy of *Ridge Racer* for every PlayStation sold," Mr. Haraguchi discloses. "Well, if it's at all possible."

Thanks to Tsuyumu Toyoda for arranging this interview

Repel The Demon Horde

The Ultima Saga has become the hallmark for Fantasy Role Playing games. This incredible series is
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FCI

Tama

Format: **Saturn**
Publisher: **Tengen**
Developer: **In-house**
Release date: **Dec (Japan)**
Origin: **Japan**

Tama is the game that completes the Saturn launch line-up. **NEXT Generation** witnesses what could be a resurrection of a classic genre

Tama is the Japanese word for ball, and in a sense developers Tengen have come full circle with their forthcoming Sega Saturn game, set to be one of the first third party releases for the machine. Tengen was established to publish home computer conversations of Atari Games' coin-ops, and it was Atari who first proved that there was gameplay in balls with its innovative arcade machine, *Marble Madness*. Released in 1985, *Marble Madness* took on its foundation a realistic simulation of ball dynamics and added some colorful isometric graphics and a trackball to create one of videogames' genuine originals. A trickle of copycat titles followed on the home computers of the day —

notably *Gyroscope*, *Spindizzy* and *Bobby Bearing* — but by the late 1980s the genre was all but dead. Only Ascilware's *Spindizzy Worlds* and Taito's *Cameltry*, both for the Super Famicom, showed that the 'roll 'em up' still had some life in it.

The gameplay

in *Tama* reverses the concept of *Marble Madness*. Instead of controlling the ball, you control the course, which you can tilt, twist and rotate in order to make the ball move in the required direction. The object is to steer the ball into a goal before a time limit runs out.

Each course, or 'field,' in *Tama* features a maze consisting of walls, ramps, steps plus one or more unusual obstacles and traps. There are no enemies, so the game
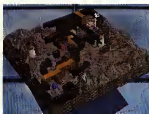
Zooming out fully reveals the nice mirrored backgrounds upon which all the fields of play lie

For fine control, you can zoom right into the field. The goal is the checkered flag on the right

On this field, the goal is much higher than on the field you start the game on. You have to guide your ball across the block-strewn landscape, make it up the ramp (very tricky) and to the right

ng alphas

Tama offers a range of views and gives you considerable control over the angle of tilt — not possible with 16bit

Getting up the ramp to the center of this level will take some doing (above). Being able to zoom in for a closer view is a crucial part of the game (above right)

is a simple race against time, but, amazingly, the pared down gameplay is accompanied by a story line: Bad balls, created by an evil machine, have taken control of Balls World, and the good balls have to try and win it back. This is resoundingly bizarre by any standards — even those of the Japanese, whose taste in interactive entertainment storylines is often strange to our Western tastes — but it does allow an excuse for setting the fields in different locations, including forests, mountains, plains, glaciers, athletic tracks and even a cemetery. As might be expected, each type of field

has its own peculiar type of terrain which affects the balls' movement in different ways and gives the action some variety.

Despite its impressive texture-

mapped geometry, Tama is unlikely to feature highly in Sega's software push for the Saturn come the US launch. As long as it delivers everything it promises, the Japanese penchant for puzzle-oriented arcade games should secure it a niche in the Japanese market, but with Clockwork Knight, Virtua Fighter and Daytona USA on the way, it's unlikely that Tama will be heading up many US gamers' most-wanted lists. **ng**

This is resoundingly bizarre by any standards — even those of the Japanese, whose taste in interactive entertainment storylines is often strange to our Western tastes

On the spooky cemetery levels, the walls and obstacles are made out of gravestones and sinister obelisks
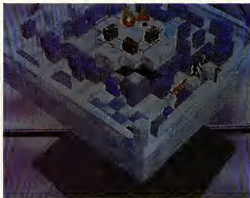
The glacier levels are, unsurprisingly enough, constructed out of blocks of ice, which makes controlling the ball's movements particularly tricky

THE DARK SIDE OF THE FORCE
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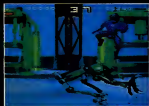A FIRST-PERSON, ORIGINAL STAR WARS CD-ROM EXPERIENCE. COMING THIS WINTER.
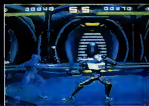
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"Speed and feel that make you want to play again and again" Gamesworld

"Graphically outstanding fast action beat 'em up" Edge

"More than just another brawler" Game Players

"Excellent graphics and great animation" Videogames

32 MEG POWER

MIRAGE

SUPER NINTENDO

ACClaim
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Daytona USA

The console version of Sega's masterful coin-op is on track to deliver an exhilarating racing experience

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**In-house, AM2**
Release date:	**TBA**
Origin:	**Japan**

By lowering the level of detail, Sega hopes to achieve an acceptable frame rate of around 20-30fps

For six months, *Daytona USA* has dominated the arcades with its blend of multiplayer action and stunning graphics. This success made it inevitable that it would be introduced to a wider audience, but the disparity between coin-op and console power has led to doubts about the attempt to port it to the Saturn.

The coin-op version of *Daytona USA* is based on Sega's proprietary Model 2 arcade board. Model 2's 25MHz 32bit CPU is used to drive a custom graphics engine capable of 300,000 texture-mapped polygons per second, w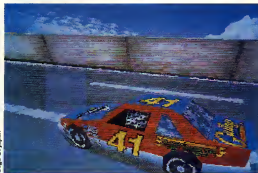ith the additional power needed to move the game along at 60fps provided by multiple 32bit 3D co-processors which take up 178 megabits of ROM on the board and operate at 16MFLOPS.

Although there's no hope of Saturn attaining this level of performance,

AM2 is retaining some of the coin-op's graphical touches, like a texture-mapped bonnet and (of course) the clouds reflected in the windshield

Sega has already made considerable progress toward a faithful conversion. By lowering the level of detail, AM2 will be hoping to achieve an acceptable frame rate of around 20-30fps. The mountains, trees and track bear the brunt of this economy drive, with a marked reduction in number of colors and texture-mapping finesse.

Perhaps the biggest draw for potential buyers is the promise of a link-up mode. Sega's recently announced seven-player multitap adaptor and steering column will allow several fully race-kitted players to take each other on. **ng**

Like *Virtua Fighter*, Daytona's screen resolution has been increased from 320x224 to 640x224. The game is now between 10% and 20% complete

© Sega Of Japan

The first screenshots released by Sega (above and right) now look blocky

The trackside detail is due to be added in the next few months. Expect the trees and walls to lose detail, however

Clockwork
Knight

With Saturn imminent, Sega is adding the final touches to its polygon platform game

Format: **Saturn**
Developer: **Sega**
Publisher: **Sega**
Release date: **Last Nov (Japan)**
Origin: **Japan**

Exploring dimly-lit levels (top), collecting useful objects (middle) and climbing over obstacles (bottom) is all taken in *Clockwork Knight's* mechanical stride

Many people were appalled at the prospect that a certain blue hedgehog would be the first platform star to make an appearance on Sega's Saturn. Sonic-haters will be relieved that the fervor has been bestowed instead upon an armor-clad clockwork doll by the name of Pepperouchau. The game in which he stars, the appropriately titled *Clockwork Knight*, is now in an advanced state of development and was scheduled to appear on the Saturn at launch.

Clockwork Knight is set inside a large American country house, which appears particularly huge to your character because he's only a few inches tall. The story revolves around a small doll called Chelsea who is trapped inside the house's cuckoo clock. Every night, when the clock strikes midnight she sings a tearful song, and her haunting voice brings all the toys in the house to life. But one night, during an electrical blackout, she disappears. So, in true platform-hero spirit, the valiant Pepperouchau goes in search of her.

Clockwork Knight boasts some outlandish 3D backdrops (above and right). An SGI-rendered Pepperouchau (right)

Featuring a mixture of bitmapped backgrounds and textured geometry, *Clockwork Knight* looks absolutely dazzling. Sega has used the Saturn hardware to its full capacity to create some fantastic parallax effects as well as generate some smooth polygon animation.

Judging by what Sega has revealed of the game (the real thing, rather than the SGI demo), a great deal of interaction is possible with the backgrounds in *Clockwork Knight*. Household objects can be knocked off shelves, clockwork trains can be commandeered and tea towels can be used to slide across slippery surfaces.

If it plays as well as it looks, Sega's clockwork hero could be the next Sonic. No wind-up. **ng**

Featuring a mixture of bitmapped backgrounds and textured geometry, *Clockwork Knight* looks absolutely dazzling

The 3D backgrounds in *Clockwork Knight* actually contribute to the gameplay. Here, a box containing a toy falls in front of you. After maneuvering it into position, you can use it to climb onto a previously inaccessible shelf. Just don't stand beneath it

Toshinden

(Tales Of The Gods Of Combat)

3D fighting games are becoming the new benchmark for console performance. Takara's polygon-fest looks like a prime contender

Toshinden contains some of the smoothest polygons yet seen and provides further proof of the PlayStation's power

Format:	**PlayStation**
Publisher:	**Takara**
Developer:	**In-house**
Release date:	**TBA**
Origin:	**Japan**

The hugely successful run of *Virtua Fighter* (in Japan at least) has galvanized fighting game specialist Takara into action with a PlayStation release that recently impressed Japanese journalists (joined by **NEXT Generation**) attending a special presentation at the HQ of Sony Computer Entertainment.

Most noted for its conversions of SNK games to the SNES and Mega Drive, Takara has now decided that it has the muscle to go it alone and release an unlicensed game. The result is the one-on-one PlayStation fighting game *Toshinden* (the title translates, rather clumsily, as *Tales Of The Gods Of Combat*). A hybrid of *VF* and *Samurai Showdown*, *Toshinden* contains some of the smoothest polygons yet seen, and provides further proof of the PlayStation's power.

Toshinden's greatest asset — a zooming camera that pans smoothly across the eight different backgrounds — is complemented by a range of superb Gouraud-shaded characters, complete with detailed clothing and even different facial expressions and hairstyles.

Takara's expertise with original ideas is untested, but *Toshinden* looks like a good starting point.

All the characters fight with weapons. Here Sofia gives the sword-bearing Kaie a whipping

The speed and animation exhibited in this sequence of moves is amazing. Virtua Fighter, Tekken and Fight For Life had all better be on their guard — literally

now there's a place
MORE VIOLENT
than earth.

How better to greet you on
the shores of Hell than horned
pink demons? Good thing you
packed your chainsaw.

Nothing clears a room of Imps
faster than the BFG 9000.

Barons of Hell - you can't live
with 'em, you can't kill 'em with anything
less than a plasma rifle.

WELCOME TO DOOM FOR THE JAGUAR
64-BIT INTERACTIVE MULTIMEDIA SYSTEM. IT'S
PURE HELL, 64-BIT STYLE. FROM THE MOMENT
YOU ENTER THE DARK HALLS OF DOOM TILL THE
LAST GUNSHOT OF THE GAME, YOU'LL PATROL
NEVER-SEEN-BEFORE LEVELS AND FACE AN ARMY
OF VICIOUS ASSASSINS PRIMED TO TAKE YOU
OUT. SATANIC DEMONS, LOST SOULS, FIRE-
BREATHING MONSTERS. YOU MAY BE SPOOKED, BUT
YOU SURE WON'T BE LONELY. WITH ITS 32-
MEG CART, ULTRA-REAL, TEXTURE-MAPPED CORRIDORS,
LIGHTNING-FAST MOVES, TRUE 3D GAME PLAY,
AND A BOTTOMLESS PIT OF HIGH-ACTION PLAY
OPTIONS, DOOM IS A 64-BIT SHOWCASE GAME
GUARANTEED TO UNLEASH THE POWER OF JAGUAR.
SO SET YOUR COURSE, PACK YOUR KILLER
INSTINCT, AND GO TO HELL.

JAGUAR
DO·THE
MATH
INTERACTIVE MULTIMEDIA SYSTEM

Fight
for life

Atari will be hoping that the Jaguar's first polygon fighting game achieves the same level of expectation as Saturn's *Virtua Fighter*

The camera pans round the fighters and a record/playback facility enables action replays

Format:	**Jaguar**
Publisher:	**Atari**
Developer:	**François-Yves Bertrand**
Release:	**Dec (US)**
Origin:	**US**

Your fighter begins with only a few moves and 'learns' those of his defeated opponents. This gives contenders up to five special attacks

After the mixed-response to *Alien Vs Predator*, Jaguar owners will be pinning their hopes on *Fight For Life*, a fighting game clearly inspired by Sega's *Virtua Fighter* arcade machine. There's actually a specific connection between the two games: The main programmer of *Fight For Life*, François-Yves Bertrand, worked for a year and a half at Sega's AM2 arcade division before defecting to Atari.

These pictures are from an early working version of the game with 900 polygons onscreen; 1,200 polygons at 20fps are promised in the finished version. In comparison, the *Virtua Fighter* coin-op boasts between 1,500 and 2,000 per fighter and the Saturn conversion will have almost 2,000 in total. *Fight For Life* employs the same expedient as Saturn *Virtua Fighter* to get around its relative lack of polygons: texture mapping. About 20% of the polygons will be textured to provide details like tattoos, logos and some facial features.

Fight For Life is set in hell, although the four backdrops are Chicago at night, a beach and two mountain scenes. There are eight fighters: a ninja, a docker, an American GI, an Amazon, a boxer (Ballrog style), a Tuareg tribesman, a 'golden girl' and the son of the devil — all fighting for the chance to live again.

A couple of features are at least original. Firstly, you can 'record' each fight and play it back afterwards. Also,
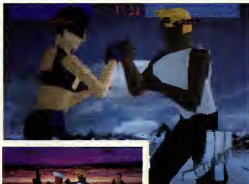
The large characters are still awaiting the final touches (top). The skyline background looks impressive (middle). The moves are well animated (bottom)

your fighter begins with only a few moves and 'learns' those of his defeated opponents. This gives each contender up to five special attacks.

If *Fight For Life* can succeed in doing even a passable impression of *Virtua Fighter*, then it should go some way to help Jaguar's chronic lack of decent games. **ng**

Gex

32bit platformers are a rare breed. 32bit platformers starring reptiles are even rarer. **NEXT Generation** samples a 3DO game that is definitely one of a kind

The TV shows that have had such disastrous consequences for Gex make fleeting appearances throughout the game. As Gex faces up to an enemy, an inverted Enterprise trundles across the top of the screen

Crystal Dynamics has chosen as its hero a hyperactive gecko lizard with a twisted sense of humor and the voice of Dana Gould

|	
Format:	**3DO**
Publisher:	**Crystal Dynamics**
Developer:	**Crystal Dynamics**
Release:	**TBA**
Origin:	**US**

Crystal Dynamics has already gained a reputation as the 3DO's most loyal champions. *Gex* sees the company heading into uncharted territory with an effort to produce the first 3DO platform game.

Crystal Dynamics has followed accepted videogames wisdom by making Gex's central character an animal. Slightly less conventional is the fact that they've chosen as their eponymous hero a hyperactive gecko lizard with a twisted sense of humor and the voice of Dana Gould, host on an HBO comedy special. According to the plot, Gex has been sucked into the Media Dimension, a place dominated by kitsch culture — '50s B movies, lunchtime game shows, etc. His object is to destroy all the television sets in this lurid limbo and then defeat arch-enemy Rez Zul.

All Gex's movements — consisting of over 450 frames of animation — were created on SGI

With hundreds of frames of animation, Gex is a highly versatile creature
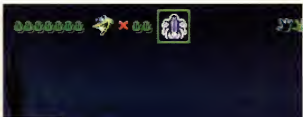
Gex's tail flick attack is hard to execute but very satisfying when it succeeds (top). Tex evades a zombie by scaling a wall (above)

gear using a process similar to that employed by Rare for *Donkey Kong Country*. What distinguishes Gex from most other platform characters, though, is that he doesn't suffer from gravitational limitations: his sucker feet enable him to shin up walls and cling to ceilings, which means he can circumvent obstacles that Sonic or Mario would find impassable.

The bosses in Gex are both imaginative and superbly detailed (top). Gex has swallowed a bluebottle powerup (above)

Glorious 32bit visuals like these are no guarantee that *Gex* will cut any ice this holiday with consumers eagerly awaiting the release of 16bit games *Sonic 4* and *DKC*

Gex has other lizard-like resources: when confronted by an enemy he can use his thrashing tail as a weapon or lash out with his darting tongue. Power-ups are also available: bluebottles and dragonflies take the place of the more usual rings and coins and allow Gex to fly or throw fireballs.

Eighteen months after launch, 3DO has a representative from almost every videogame genre, with the most obvious absence being a killer platform game. Although *Gex*, with unorthodox main character and obscure cultural references, isn't exactly standard platform fare, it could prove to be the format's equivalent of *Mario*. ng

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Virtua
Fighter 2

With two new characters and upgraded graphics, Sega's sequel to its mold-breaking fighting game is sure to have fans slavering

Format:	**Arcade**
Manufacturer:	**Sega**
Developer:	**In-house, AM2**
Release date:	**Dec (Japan)**
Origin:	**Japan**

Sega's new-found texture-mapping prowess is evident in every aspect of *Virtua Fighter 2*'s improved graphics (above). Lion (far left) and Shuntei (left) are products of Ya Suzuki's trip to China

Absent from the show floor at AMOA but hogging most of the limelight at JAMMA was Sega's sequel to its revolutionary *Virtua Fighter*. Now roughly 75% complete, *Virtua Fighter 2* includes two new characters, runs at 60fps (twice the speed of the original) and can shift 300,000 textured polygons every second. Sega is also adding extra touches, like logos on the characters' clothes and new 3D backdrops.

NEXT Generation has learned that the Model 2 board used for *VF2* has been sped up and now includes extra memory, enabling the screen to draw further into the distance. This was one of the most noticeable problems that *Daytona USA* suffered from.

The development of *VF2* involved Sega's AM2 supremo, Yu Suzuki, taking a special trip into the heart of China to seek out guidance in the art of unarmed combat from kung fu experts. One new

character, Shuntei, is based on a martial arts master Suzuki encountered on his travels. A wise old man with a drink problem, Shuntei totters around the screen, thoroughly confusing his opponent, before lurching in for the kill. Despite this display, he is said to be the most skilful in the game. The second addition, Lion, is modeled on another kung fu fighter Suzuki met in China.

Although Sega has so far kept its latest coin-op creation behind closed doors — at AMOA — *Virtua Fighter 2* will arrive in the US later first quarter '95. Plenty of time for anticipation to reach fever pitch.

Shuntei is a wise old man with a drink problem who totters around, confusing his opponent, before lurching in for the kill

Background depth and character detail (top and above) are *VF2*'s most striking elements

ng

finals

The very latest in interactive entertainment reviewed and rated...

90	3DO
92	Jaguar
93	Sega 32X
93	CD-i
94	Neo-Geo
94	PC CD-ROM
98	Sega CD
99	Genesis
102	SNES
104	Arcade

3DO

Alone In The Dark

Publisher: Interplay
Developer: Infogrames
Size: 1 CD-ROM
Release Date: Available now

One the most innovative titles to come out of the PC arena since SimCity, Alone in the Dark is an unlikely combination of H.P. Lovecraft-style mythos set in a strange world of multiple camera angles and animated polygons. As the character Carnby, an old-school private eye with a mission, you'll confront an otherworldly mansion full of zombies, ghosts, and demons straight from the pit of hell (really) in a battle for survival. Alone's subtle mix of eerie music, grim animation sequences, and suspense-filled storyline create an atmosphere of tense horror that adds an interesting new twist to the standard graphic adventure.
Rating: ★★★

Demolition Man

Publisher: Virgin IE
Developer: Virgin IE
Size: 1 CD-ROM
Release Date: Available now

We'll concede an extra point for sheer verve. Demolition Man follows a well-established pattern by taking an existing game and adds digitized goodies to spruce up what's an unoriginal design. But the game then goes a step further by aping no less than four different kinds if games: an Operation Wolf-style shooting gallery, a side-view fighting game, a driving game, and a Doom ripoff. It sure breaks things up and keeps you on your toes, and if any of the individual stages were crated very well it might have worked. Unfortunately, that didn't happen.
Rating: ★★

John Madden Football

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 1 CD-ROM
Release Date: Available now

For those players who haven't had a chance to see EA's John Madden Football in at least one of its many incarnations, this newest 3DO version is definitely worth taking a look. Every bit as exciting and easy to play as the original title, John Madden Football takes advantage of 3DO's custom animation hardware to create smoothly animated images that make it seem like you're watching a real game on TV. In addition to the normal NFL teams, the game also includes a score of classic teams from football's past. There is an all-Madden team consisting of all of today's greatest players, and best of all, there is an all-star team consisting of the best players in football's history. This is simply the best arcade-style football game currently available.
Rating: ★★★★

Mega Race

Publisher: Mindscape
Developer: Cryo
Size: 1 CD-ROM
Release Date: Available now

This is a fine example of how digitized video and 3D animation can be used to add to gameplay, rather than substitute for it. At its heart, Mega Race is a great racing game, offering 14 tracks in five settings, all beautifully texture-mapped and animated on SGI workstations, with enough arduous opponents and bizarre obstacles to provide a solid, entertaining challenge. Then the game builds a complete and oddly believable world around the race track: from the inventive cityscapes to the deliberately annoying show host. There are even cutaways to technicians in the control booth and spectators watching at home. It would seem that every new piece of hardware

A twirling loop (featuring ultra-smooth track animation) is one of Mega Race's early highlights. But this 3DO racer from Mindscape could soon be superseded by second-generation titles from EA and Crystal Dynamics. Stay tuned

needs to proves itself on a racing game, and this could be the 3DO game to compete with Daytona, Ridge' and Crush'r'. Good stuff.
Rating: ★★★★

Pataank

Publisher: P. F. Magic
Developer: P. F. Magic
**Size: 1 CD-ROM**
Release Date: Available now

P. F. Magic scores a point for being creative: Pataank is a pinball game with you as the pinball. You steer the ball (actually, it's more like a flying saucer), knocking into targets, 'conquering' three play fields. The system's 3D folios are nicely utilized to keep things swirling around, and the animated bitmapped 'movies' playing everywhere are fun, but the results are as confusing as they are unique. Even worse, all three of the pinball arenas are way too similar — once you get the hang of it, which takes maybe 10 minutes at most, you can breeze through the rest of the game. It's an interesting idea, done badly.
Rating: ★★

Road Rash

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 1 CD-ROM
Release Date: Available now

One of the elements that made the cartridge version of EA's violence-fest, Road Rash, as popular was its impressive ability to give players a truer feeling of speed than any game before it. Now armed with the processing power of the 3DO, crisper digitized images, and silky smooth animation, EA adds realism and depth to the power
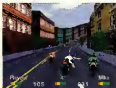
Smooth animation and control give an unmatched feeling of speed give Road Rash a real edge

and velocity of its predecessor. Sticking with the seat of the game's in-your-face attitude, EA added a soundtrack including two songs from the grunge band Soundgarden. Although the game's long term play value is damaged by repetitive levels, this is still a near classic title that will make a worthy addition to any 3DO library.
Rating: ★★★★

Shock Wave

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 1 CD-ROM
Release Date: Available now

Shortly after the release of every new game platform, one expects several games to quickly pop up attempting to pass off an old school, arcade shoot 'em up as the pinnacle of technology. After a few short minutes with Shock Wave, it is obvious that behind the video actors and CD quality sound is merely a hopped-up remake of Battlezone. While EA has done a fantastic job creating beautiful backgrounds, some wonderfully atmospheric introduction sequences and sinister opponents, the tedious and repetitive gameplay soon becomes utterly joyless. If you own a 3DO unit and you've just been dying for a no-frills shooting game, then it's OK. But anyone with greater expectations will be disappointed.
Rating: ★★

Soccer Kid

Publisher: 3DO
Developer: Krisalis Software
Size: 1 CD-ROM
Release Date: Available now

The real problem here is that aside from a confusing plot and the addition of a soccer ball, there isn't anything new in Soccer Kid—it's just another PC platform game. Each of the 25 levels consists of running through a landscape kicking the soccer ball at moving objects and picking up pieces of the World Cup to reach your goal (no pun intended). Hopefully, 3DO can evolve past this type of game faster than the systems of yesterday.
Rating: ★★

Star Control II

Publisher: 3DO
Developer: Crystal Dynamics
Size: 1 CD-ROM
Release Date: Available now

Star Control II isn't so much a sequel as a remake of the original PC and Genesis titles. It has better graphics and sound, and a more involved storyline, but structure and play mechanics are the same: wander about thousands of planets, run from alien's bigger than yours, pick up tiny clues. The voice actors,

Star Control II for 3DO sticks firmly to the formula used in Star Control for the PC and Genesis. If it ain't broke, why fix it?

at least, are good (the cowardly race of Spathi is a hoot), and if you've the patience to spend hours digging for minerals, the game is addictive, but not state of the art.
Rating: ★★★

Super Wing Commander

Publisher: Origin
Developer: Origin
Size: 1 CD-ROM
Release Date: Available now

Success often strips a developer of its innovative spark, but it looks like Origin's Wing Commander team is still devoted to creating games that do more than ride the coattails of previous releases. Far better than the tepid Super

Diving saves, fumbles, and last minute goals keep play broken high throughout the game

Camera angles change during goal and corner kicks, and action-replays are shown after key goals. The effect is similar to watching a television broadcast

Onfield camera views look great but often make it difficult to keep track of where other players are

KICKING!

FIFA International Soccer

Publisher: Electronic Arts
Developer: Electronic Arts
**Size: 1 CD-ROM**
Release Date: Available now

More than any other game, FIFA International Soccer will make you glad to own a 3DO system. In terms of technical achievement, this is the 'killer ap' graphics showhorse that Trip & Co. have been waiting for. And it's a great game, too. Whether the dying embers of World Cup Fever are enough to help FIFA fan the flames of 3DO hardware sales, however, is another question...

Unlike EA's other ports, the 3DO version of FIFA has a look and feel that is very different from its cartridge-based counterparts. Using a slick, rotating-camera effect, complete with multiple views and more detailed player graphics, the new FIFA delivers an improved, realistic feel without sacrificing the friendly interface and flawless two-player action that made the original so popular.
Rating: ★★★★★

rating jaguar
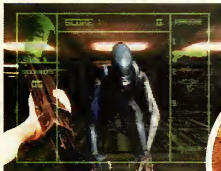
Without heavy weaponry, the colonial marina won't last long in a close fight

than superficial, it determines not only how you will fight and where you can go, but what you're actually trying to do.

The predator is probably the easiest character with which to start, and comes with plenty of nasty weapons and the ability to turn invisible at will. Here, you gain points by 'honorably' killing (no you

Aliens can use their superior speed and number to overwhelm their fleshy opponents

can't just turn invisible and start swinging) the other inhabitants of the base. Your end goal is to collect the skull of the alien queen.

Alien characters have the advantages of speed and weapons, you are able to increase your number of extra lives by placing eggs into the bodies of fallen enemies. When you die, you can continue by living the life of your newly-hatched children. Your goal is to find your breed queen.

Playing a human may not sound like fun, but it's actually the most like watching the movie. As a human character, you lack the strength or speed of either of the different races. Instead, you must depend on high-tech weaponry and human craftiness to carve out a path. Your only real goal at first is to merely survive.

On the down side, the game is plagued with ultra-slow load times that really shouldn't be present in a cartridge release. Controls aren't as easy as they could be (side-step and weapon select buttons are difficult to get to in a heated fight), but neither of these quirks stops AVP from delivering some really good play. Definitely the best Jaguar title we've seen so far.

Rating: ★★★★

RIPPIN'

Alien Vs. Predator

Publisher: Atari
Developer: Atari
Size: 4 Mbits
Release Date: Available now

Predators must collect a goodly amount of honor before they are awarded new weaponry

One of Atari's first holiday titles, Alien Vs. Predator is a Doom-like, first person action game with an interesting twist. Players can choose to take on the role of the predator, the alien, or the marine, all trapped in the same base. Your choice here is more

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Nintendo conversion, Super Wing Commander delivers all of what made the original PC version so popular. It also takes advantage of the 3DO's CD storage space and twin graphics animation processors to tack on brilliant, new plot animations and crisp voice acting. While hampered by the frustrating 3DO controls (you won't see many fighter pilots using a gamepad), Super Wing Commander succeeds at being what it was intended to be — a straightforward space simulator with an arcade spin.
Rating: ★★★★

Slayer

Publisher: SSI
Developer: Lion
Size: 1 CD-ROM
Release Date: Available now

With SSI's dark rendition of TSR's legendary AD&D game world, role-playing games have finally hit the 3DO. While it resembles such classic PC games as Origin's Ultima Underworld and Virgin's Lands of Lore, Slayer nonetheless walks the line between action

and RPG without ever quite achieving either with complete success. Despite an easy-to-use interface and stats straight from the pen-and-paper version, Slayer's dull action segments and somewhat straightforward puzzles make for play that consists mostly of wandering around mazes (solving for entertainment. All in all, a great first attempt, but far short of market demands.
Rating: ★★

Way of the Warrior

Publisher: Universal Interactive
Developer: Naughty Dog
Size: 1 CD-ROM
Release Date: Available now

Way of the Warrior wants to be Mortal Kombat, but it barely comes up to being Pit-Fighter. True, it's got a hard-edged atmosphere beyond the sloppy bloodletting: the 3D rendered backgrounds are mostly well done, and the White Zombie numbers they use for a soundtrack absolutely kick.

However, the characters are one incredibly cheap-looking bunch, the animation is stilted at best, and the control is in a sorry class all by itself. Way of the Warrior only proves that no amount of music, 3D rendering and gore can make up for basics like gameplay and good character design.
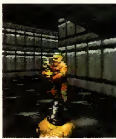**Rating:** ★★

Jaguar

Doom

Publisher: Atari
Developer: id Software
Size: 4 Mbits
Release Date: Available now

Pulling no punches, Atari has decided that Jaguar's new version of Doom will contain all of the blood and demonic references of the original IBM game. Armed with chain saw, shotgun and more, now cartridge players can experience the sheer joy of wandering through dark halls taking potshots at demons, imps,

and barons of hell. Modem play is also to be included, and options for both competitive "death-match" and cooperative play modes are supported by the cart. Although slightly held back by its pixely closeups and sluggish control, all of the action and appeal of the PC version is still here.
Rating: ★★★

Graphics are a touch weaker, but this version of Doom has all the presence of its PC cousin

Tempest 2000

Publisher: Atari
Developer: Llamasoft
Size: 16 MBs
Release Date: Available now

By adding crisp, 3D polygon graphics, a techno soundtrack, and a swarm of new enemies and obstacles, Atari has managed to create a fresh cart out the 13-year-old arcade game. More than just a graphics upgrade, Tempest 2000 offers 100 different boards, new opponents, and power-up features like a particle-blaster,

First generation gameplay mixed with todays graphics makes for a new and improved Tempest

jumps, and A.I. droids who destroy anything that gets too close. Also new is the 'Melt-O-Vision effect' which looks like a psychedelic version of Nintendo's Mode 7. There are also several different play options offering two-player cooperative and competitive play modes. A must for everyone who owns a Jaguar game system.
Rating: ★★★★

32X

FORCEFUL

Star Wars Arcade

Publisher: Sega
Developer: Sega
Size: 24 Mbits
Release Date: Available now

Based on the recent coin-op of the same name, Star Wars Arcade has to produce on 32X what was previously accomplished only on Sega's famed AM2 board, which generated the polygons behind such Sega hits as Virtua Fighter 2, Daytona USA, and Desert Tank. A fine attempt.

The 3D graphics are remarkably good, although the absence of texture-mapping gives the game a 'flat' look. The music is CD quality, including many songs from John Williams' classic theatrical score. The ship controls well, and most importantly, the games doesn't force you to fly down a specified 'track' like in Star Fox or Starblade. Also, eight new levels were created specifically for the 32X version to give the home player a longer replay value. An excellent translation of a good game, and a good hint of what to expect from 32X.
Rating: ★★★

A squad of X-Wings prepare for the assault on the Death Star (top); Tie-Fighters and Laser Canons attack from the Death Star's surface (left); When you see this message, it's time to use the Force (bottom)

Wolfenstein 3D

Publisher: Atari
Developer: Id Software
Size: 2Mbits
Release Date: Available now

The game that brought Id into the spotlight is back for yet another run. Far better than the watered-down version appearing on the SNES about a year ago, all of the original game's blood, guts and gore, as well as the cool sound effects have been retained. While this is a better translation than most, Wolfenstein is still a game that's getting a bit gray at the roots. The brand palette which was originally intended for 16-color machines, and limited gameplay options (four different standard enemies) keep the game from ever competing with next generation titles like Id's own Doom, and Alien Vs. Predator. A good game, but just not up to newest games the market has to offer.
Rating: ★★

32X

Virtua Racing Deluxe

Publisher: Sega
Developer: Sega
Size: 24 Mbits
Release Date: Available now

Two new cars and two new tracks were specifically created for this 32X version. The increased 32X color palette of 32,768 colors makes a huge difference in the graphics, leaving the grainy, dithered look of the pricey Genesis version far, far behind. The control feels just like the arcade version, even though the game's always had slight problems in this area. It can be extremely difficult to maneuver at even medium speeds, and trying to match the game's challenging course records can quickly lead to frustration. Still, VR Deluxe is a near-perfect conversion of a game that's still fun to play.
Rating: ★★★

CD-i

Litil Divil

Publisher: Philips
Developer: Philips
Size: 1 CD-ROM
Release Date: Available now

A children's game that takes full advantage of CD-i's FMV capacity, Litil Divil uses CD storage to its fullest, delivering crisp animations and high-quality sound effects. Unfortunately, unless you're a maze fan, the title is completely devoid of any entertaining gameplay whatsoever. Control is sluggish, offering the player almost no chance of making it through the often furiously paced action sequences. The various levels (fighting, jumping, or maze) fail to offer anything more than a stimulus-response style of play that will have most players (even children) disinterested inside of a few minutes.
Rating: ★

The 7th Guest

Publisher: Philips
Developer: Trilobyte
Size: 1 CD-ROM/DV cartridge required
Release Date: Available now

Trilobyte's 7th Guest is a perfect choice for conversion to CD-i; the digital video cartridge eliminates many of the skips and jerks of the PC release, resulting in a smooth, wonderfully cinematic experience previously only possible on a Pentium. There are a couple of problems, however. First, the increased play speed saps a lot of 'Guests' "creepiness" — you're now jogging confidently down corridors instead of tiptoeing. Second, puzzles originally designed for a mouse interface are hard to operate with CD-i's clunky remote. But minor glitches aside, the smooth video, crisp sound, original tracks featuring the almost-famous 'FAT MAN' — combined with devilish puzzles — makes for a lavish CD game.
Rating: ★★★

93

rating neo-geo cd-i

CD-i

Pioneering hurts, as CD-i paves a trail for interactive movies to come

HEATED

Burn:Cycle

Publisher: Philips
Developer: Tripmedia
Size: 1 CD-ROM
Release Date: November 18

CD-i's coolest title so far, Burn:Cycle is an ironic mix of everything that's good and bad about the watch-play-watch "interactive movie" genre. The basic story is as entertaining as a good mini-series, with quality acting, a professional score, and a plot straight out of Neuromancer. But while the game's puzzle content is both innovative and attractive, the action portion is as frustrating as playing Operation Wolf with a faulty controller: either the CD-i's "joypad" isn't designed for this pace of action or Burn:Cycle's code simply isn't up to the job. Either way, the end result is a game that pulls you into a fantastic new world, but never delivers the interactive power necessary to keep you wanting to stay there.

Newcomers to gaming will be amazed at Burn:Cycle's beauty. Experienced arcade thrashers will wonder what all the fuss is about.
Rating: ★★★

Voyeur

Publisher: Philips
Developer: Philips
Size: 1 CD-ROM
Release Date: Available now

Probably the best interactive movie available, Voyeur uses competent actors as well as studio-quality sound and visual effects to create an intriguing political thriller. While most players will spend their first few hours watching for the scattered scenes of sex and violence, the game has enough backbone to remain entertaining after the novelty of half-dressed women has worn off. Along with a simple interface and loads of high-quality video, a complex plotline filled with incest, back stabbing, and blackmail will keep players interested and involved. Although it won't appeal to action fans, this title has enough depth and

replay value to be a valuable addition to any CD-i library.
Rating: ★★★

NEO-GEO

Aero Fighters 2

Publisher: SNK
Developer: Video Systems
Size: 102 Mbits
Release Date: Available now

Aero Fighters 2 is an old school, overhead shoot-'em-up that's surprisingly small for a Neo-Geo release. Players can choose from one of eight different pilots, including a talking dolphin, each with his or her own plane (F-117, A-10, FSX, etc.) and then fly though eight varying stages from around the world. But while the graphics and sound are arcade quality, the game itself grows

tedious very quickly. Players with any skill will beat the game on the easy or normal level in under an hour. The higher levels offer more challenges, but not new ones.
Rating: ★★

Aggressors of Dark Kombat

Publisher: SNK
Developer: Alpha Denshi
Size: 178 Mbits
Release Date: Available now

A fighting game with all the extras, Aggressors of Dark Kombat is an entertaining mix of the Street Fighter II-style tournament fight with the

Chivalry counts for nothing in ADK's often amusing mismatches

dimensions and weaponry of Final Fight. In addition to the usual barrage of punches and kicks, characters can mix it up using Molotov cocktails, shovels, and even baseball bats wrapped in barbed wire. The eight fighters available are not all typical fare either: a young basketball player, a Japanese street punk, and even a uniformed schoolgirl. Although moves are difficult to pull off, ADK's crisp look and powerful action make it well worth the trouble.
Rating: ★★★

PC

Colonization

Publisher: Microprose
Developer: Microprose
Size: 5 MBs
Release Date: Available now

MPS Labs borrowed heavily from classic hits of the past to create a surprisingly addictive title with a flavor all its own. Colonization is a strange hybrid, combining the ideas of EA's Seven Cities of Gold, the interface of Civilization, and the soundtrack of Railroad Tycoon, with situations and atmosphere that is entirely new. The complex strategies of dealing with eight different tribes and the encroachments of three other land-hungry countries, while

Keeping track of diplomacy, food, weaponry, and local tribes can be a mammoth task in Civilization

keeping track of 16 different kinds of production balanced with simple controls and a helpful tutorial, keep the game absorbing and enjoyable for strategy hounds and newcomers alike.
Rating: ★★★★

Delta V

Publisher: Bethesda
Developer: Bethesda
Size: 17 MB
Release Date: Available now

At first glance, Delta V's lightning-fast animation and Gibsonesque storyline is definitely exciting. While the game's high speed and Gouraud shading are technically impressive, the gameplay never changes thoroughly enough to deliver any long-term entertainment. No matter how far you get into the game, or how many new weapons and gadgets earned on a mission, it's just plain hard to move beyond the fact that for all its extras, Delta V is like playing the trench stage of the original Star Wars arcade game over and over again. Welcome home Luke...
Rating: ★★

Doom 2

Publisher: Good Times
Developer: Id Software
Size: 16 MBs
Release Date: Available now

After the runaway success of the original Doom, it seems that id is content to sit on its laurels rather than push the envelope farther. Doom 2 looks more like an add-on scenario than a sequel. OK, so there's a slight graphics upgrade (greater variance in scenery texture maps and bad guys), a double-barreled shotgun and a handful of new enemies. But basically, the game is nothing more than a collection of new maps for the first title. Now that the first person interface has become the design of choice for the entire industry, id will need to find new innovations, or it will quickly find it's playing catch-up in its own game niche.
Rating: ★★★

You'll either end up a **HERO** or a barbecued **CHICKEN!**

Fire. Fighter.

Introducing **MIDNIGHT RAIDERS** and **FAHRENHEIT**, two sizzling new TruVideo thrillers from Sega CD.

In **MIDNIGHT RAIDERS**, you're on a do-or-die mission to rescue a kidnapped scientist. You'll have to decide who is friend or foe if you want to make it out alive!

In **FAHRENHEIT**, the first game about fire fighters, you'll battle intense heat and flames to rescue innocent victims.

Think you can take the heat? Then let Midnight Raiders and Fahrenheit take you straight into the line of fire!

COMING IN JANUARY!

SEGA

The Fortress of Dr. Radiaki

Publisher: Merit
Developer: Meolstorm and FutureVision
Size: 1 CD-ROM
Release Date: Available now

Take Doom, add great, new rendered graphics, a sense of humor, and you've got The Fortress of Dr. Radiaki. As special-agent Mack Banner, you must take on the mysterious (and very eccentric) Radiaki, a household appliance tycoon bent on world domination. Armed with only a baseball bat (and

Definitely something different, Malcolm's Revenge awards points for senseless cruelty

later a host of gear including swords, flamethrowers, and grenade launchers), you'll fight off Radiaki's twisted experiments — burly Cuban soldiers, ninjas, toaster-headed robots, suicidal samurai and even alligator men — on your way to take on the warped doctor himself. In spite of a quirky control system that makes it difficult to hit some targets and disorienting movement mechanics that take a while to get used to, the game's incredible graphics and tongue-in-cheek cult-film atmosphere are sure to appeal to fans of other first-person shooters.
Rating: ★★★

Malcolm's Revenge

Publisher: Virgin
Developer: Westwood
Size: 1 CD-ROM
Release Date: Available now

After slaving the world in the first two Legend of Kyrandia titles, you now have the opportunity to

utterly destroy it. In Malcolm's Revenge, you are the insane, magic-slinging jester in a bizarre game of revenge. A major upgrade from The Hand of Fate, this installment offers crisp objects with 3D feel, and painting-like backgrounds that complete the strange, rural landscapes of Kyrandia. New play controls have also been added, including a conversation stance icon that features nice, normal, or deceitful settings. The brilliant visuals, a great sense of humor, and truly challenging puzzles will remind you what a great graphic adventure is all about.
Rating: ★★★★

Master of Magic

Publisher: Microprose
Developer: Simtex
Size: 25 MB+
Release Date: Available now

Master of Magic takes the comfortable strategies and interface of Civilization and adds magic and monsters to create an unusual mix of politics and sorcery. Your player must gain power over as many as four opponents by either eliminating them or gathering enough power to magically subjugate them to win. Diplomacy also plays a key role, and intelligent players will pit their enemies against each other to save their own resources. While it's very similar to Civilization, MOM has so many new features (200 army types, 210 spells of 6 different types, including nature, death, life, chaos, and sorcery colleges, and 80 magic items) that it stands very well on its own. Beginner players may have some trouble with the game's high level of complexity and often hard-to-follow instructions, but veterans will be satisfied.
Rating: ★★★

NHL Hockey '95

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 1 CD-ROM
Release Date: Available now

Electronic Arts' follow up to one of the best sports games to hit PC, NHL '95, is more than just a statistics update. On the gameplay side, expansion teams, fake shots, drop passes, one-on-one penalty runs, and laying down

In Master Of Magic, finding new sources of power and fighting hostile wizards requires a subtle, strategic hand

on the ice have been added along with management options such as trading and creating players. Play graphics have also been improved with crisper images and new player animations. With the increased storage capacity of CD-ROM, EA also manages to fit in great FMV footage of actual NHL games, digitized sound effects and music. A must for any serious hockey fan.
Rating: ★★★★

PC

ROUNDED

Relentless

Publisher: Electronic Arts
Developer: Adeline
Size: 1 CD-ROM
Release Date: Available now

Brought to the US by French publisher Delphine, Relentless is an elegant cross between a classic graphic adventure and an action game. Visually similar to Infogram's Alone In The Dark, the game uses texture-mapped gadgets to shape its twisted world. An equally entertaining storyline takes the player through the perils of life in a land where strange clones and a ruthless dictator make life 'unpleasant.' Relentless is easy to control with four different stances allowing your character to fight, jump, sneak, and manipulate the various items in the game. Although puzzle content is light, there's still enough of a challenge here to keep most players happy from start to finish.
Rating: ★★★★

Onfield camera views look great but they often make it difficult to keep track of the other players

rating sega cd

Sega CD

If you buy Rocket Science's *Loadstar*, here's what you're paying for: stare you've never heard of an expensive digitized video

Here's the actual game part. This is the bit you play. Seen it before? Of course you have, only last time it was called *Sewer Shark*, or *Microcosm*, or *Rebel Assault*. Got the picture?

GROUNDED

Loadstar: The Legend of Tully Bodine

Publisher: Rocket Science
Developer: Rocket Science
Size: 1 CD-ROM
Release Date: Available now

Rocket Science received a lot of good press while filming its first game, *Loadstar: The Legend of Tully Bodine*, including time on "Headline News". But all the company has managed to do is to prove just how little $3 million worth of Ned Beatty on digitized footage adds to a game. For all the bells and whistles, *Loadstar* is just three stages of shooter set on train tracks. From a technical standpoint, the fullscreen video is impressive, but the *Sewer Shark* retread is about as much fun as watching cement dry. Counting *Rebel Assault* and *Microcosm*, there is a wide range of similar titles from which to choose. The only thing they are good for is showing people what your new, expensive, multimedia system can do by 'wowing' them with digitized video. Look, *Sewer Shark* comes free with your Sega CD, why actualy pay for this?
Rating: ★★

PGA Tour Golf 486

Publisher: Electronic Arts
Developer: Hitmen Productions
Size: 1 CD-ROM
Release Date: Available now

In the attempt to beat Access' *Links 486* to the market, Electronic Arts has produced a machine intensive simulator (486 DX 50MHz w/8 MBs of RAM and a double speed CD-ROM recommended) of its own. Unfortunately, all of the great extras this game has to offer — Super VGA digitized backgrounds and animations; actual players and stats from the PGA tour; and four different ways to play — aren't quite enough to offset the game's snaillike performance even on a maxed-out system. The near continual access delays from both the CD-ROM and unnecessary user prompts, along with a frustrating targeting system, will keep all but the most die-hard golfers from ever being entertained.
Rating: ★★

Quarantine

Publisher: Gametek
Developer: Gametek
Size: 1 CD-ROM
Release Date: Available now

In one of the most innovative uses of the first-person game engine so far, *Quarantine* puts you in the shoes of a futuristic cab driver. Strange and violent throughout, it is a noteworthy cross of action, racing, and shooting genres with just a touch of role-playing added in for good measure. Graphics are a touch on the grainy side, but smooth animation and an easy interface more than make up for it. Plenty of new weapons and powerup items along with different mission options give the game long-term play potential. Bloody fun for budding psychotics.
Rating: ★★★★

SEGA CD

Battlecorps

Publisher: Time Warner
Developer: Core Design Interactive
Size: 1 CD-ROM
Release Date: Available now

Core was the design team responsible for one of the best Sega CD titles ever: *AH-3 Thundersttke*, *Battlecorps* uses the same engine, but in trading the flying machine for a walking robot, the net effect is the

Battlecorps uses an engine designed for flying and uses it in a game of walking. Not bad if you can live with the graphics

slowing down of action. Big mistake. It's still a relatively exciting challenge — there's a variety of terrain, including a few key underground levels, and you've got a wide selection of weapons. But bitmaps that look fine if you fly by them look blocky walking up to them. On well, we'll keep waiting for *Thundersttke II*.
Rating: ★★★

Lethal Enforcers II: The Gun Fighters

Publisher: Konami
Developer: Konami
Size: 1 CD-ROM
Release Date: Available now

It isn't a bad game, but *Lethal Enforcers* probably caused more of a stir in Congressional hearings than in software stores. It's about as innovative as a Red Ryder BB gun, but this straight-up action holds undeniable no-brain appeal. The sequel chucks the drug dealing terrorists for cowboys, and keeps the player from repeating stages over if too many civilians are shot. The graphics aren't as good — the desert earth tones all blend together — but it's more challenging, since many more of the targets move this time, if you liked it once, you'll like it again.
Rating: ★★★

Mickey Mania: The Timeless Adventures of Mickey Mouse

Publisher: Sony Imagesoft
Developer: Travellers Tales
Size: 1 CD-ROM
Reelease Date: Available now

At its heart, this is another side-scrolling action game, although a gorgeous one. Although the 16-color Sega palette keeps it from looking as good as the SNES version, the CD-based soundtrack boasts a 26-piece orchestra that more than makes up for it. You'll also find an extra couple of levels that wouldn't fit in a 24MB cart. There's just enough innovation

here (including an oncoming perspective only used once before, in Virgin's *Lion King* to make it a must, and if you've got kids, I think it's the law.
Rating: ★★★★

The Masked Rider

Publisher: Sega of America
Developer: Toei
Size: 1 CD-ROM
Release Date: Available now

Here we go again. This is another in the "action-reaction" style game that started, oh, ten or fifteen years ago with *Dragon's Lair*. You know the kind: Watch the video, then tap the control pad the way the game tells you. The only item of marginal interest is that the video is based on Rider 2O, the latest in a 25-year long running "Masked Rider" series of kids' shows in Japan. It's guy-in-rubber suit action at the "Ultraman" level which has a certain appeal to some folks I know. But as a game, it's almost worthless.
Rating: ★★

Snatcher

Publisher: Konami
Developer: Konami
Size: 1 CD-ROM
Release Date: January

For Sega CD, this is mildly ground breaking. The approach is very Japanese, mixing mature character relationships (in what other game do you have to worry if your wife wants a divorce?) with severed heads, talk of STDs, then throwing in a cute, robot sidekick and other strained comic relief. The CD-based dialogue could have been supplied by better actors, and there's no consistent way your character can pick up and handle objects, but as long as you don't mind the schizo handling of the material, it isn't all bad.
Rating: ★★★

Gloppy, severed heads prove this isn't for kids, but adults will have to suffer the goofy robot sidekicks

GENESIS

Contra: Hard Corps

Publisher: Konami of America
Developer: Konami of Japan
Size: 16 Mbits
Release Date: Available now

Konami's successful Contra series dates back to the 8bit NES. But for the first time, Genesis owners can partake in the mass carnage only a *Contra* game can give. Just like its predecessors, *Contra: Hard Corps* plays at a furious pace. The loss of a life meter means one hit and you're dead. With three lives and five continues, you can only sustain 15 hits while trying to jump and shoot your way through five boss-laden levels. You choose between four unique characters, each with its own advantages and disadvantages. There are also points in the game where you must choose which course of action to take (whether to chase an escaping enemy or stay and defend the base). Either way, you're sure to run into hordes of original foes (like a giant, dancing, car-tossing cyclops). *Contra: Hard Corps* is the ultimate side-scrolling shooter and a beast of a game that won't be easily defeated. And that's official.
Rating: ★★★

Dynamite Headdy

Publisher: Sega
Developer: Treasure
Size: 16 Mbits
Release Date: Available now

The developers at Treasure (the hot Japanese team responsible for *Gunstar Heroes* and *Super Castlevania*) have given Sega the perfect platform mascot to help take the load off the ever-aging Sonic. There are nine levels of decidedly original gaming as Headdy runs and jumps through his movie-inspired world (Toys 'n the Hood, Spindarella) with his flying puppet-head as his only defense. The variety of heads (tiny head, sleepy head, bomb head, hammer head, vacuum head, to name a few) each serve their own unique purpose in this

Sega Genesis

Earthworm Jim wee once a humble earthworm, until a magic robo-suit fell from space, landed on his head and turned him into a superhero

You'll meet this cow again (left). As for this giant guinea pig, hop off quick (right)

POLISHED

Earthworm Jim

Publisher: Playmates
Developer: Shiny Entertainment
Size: 16 Mbits
Release Date: Available now

A lot has been written about Shiny Entertainment. The hype generated by one amiable programmer, his funky team and a decent track record comes second only to the buzz coming from Rocket Science's $20million mission control. But here the attention is justified.

It all started in 1993, after David Perry's enormous success with Virgin's *Aladdin* earned the programmer enough clout and money to form Shiny Entertainment in sun-drenched Laguna Beach. Turning down lucrative deals to develop further licensed products, Shiny instead decided to develop an original character. Next, they evolved the Digicell technique used in *Aladdin* into a process called *Animotion*. Third, they polished it until it shined. The result: a hero called *Earthworm Jim* and animation twice as smooth as *Aladdin*.

These ground-breaking visuals, however, simply enable some rock-solid, back-to-basics gameplay to strut its all-too-seldom-seen stuff. There are secret stages, hidden items, machine guns, wonderfully inventive characters and even flying cows.

Sure, it's only a slick 16bit platform game. And anyone looking for anything revolutionary will be disappointed — there's nothing strictly new here. But it's a whole load of fun, and *that's* what counts.
Rating: ★★★★

Sega Genesis

EVOLUTIONARY

Sonic And Knuckles?

Publisher: Sega of America
Developer: In-house
Release: Available now
Size: 16Mbit

Basically, this is the same *Sonic* game that Sega has sold for the last three years, just wrapped up better and with a prettier ribbon. In fact – taken at face value – it's nearly indistinguishable from *Sonic 3*, released only eight months ago.
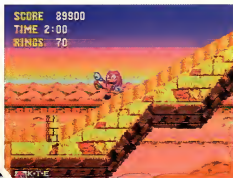
However, the company's latest character, a red echidna with dreadlocks called Knuckles, has a certain hip appeal that *Sonic* is starting to lose. And even more importantly, this cartridge is the world's first to be backward compatible with older games in the *Sonic* series.

A slot in the top accepts previous *Sonic* carts and enables you to play them starring Knuckles instead of (yawn) Sonic. Does this make *Sonic 2* less tedious? Well, no. But it is an impressive technical feat and if it points to a future where old games can be given a new lease on life with "mission carts" similar to the expansion disks that have long been available for PC titles, then NEXT Generation is all for it.
Rating: ★★★★

Gamelands first splay ant-eater, Knuckles the Echindna slides down a typical Sonic game screen. Is he a hip new videogame character or Sonic is Red? You make the call…

Sonic's bust is replaced. So what's next? Take George Washington off the dollar bill?

Backward compatibility at work. Knuckles' name magically appears, and Tails is history

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Mickey Mania: The Timeless Adventures of Mickey Mouse

Publisher: Sony Imagesoft
Developer: Travellers Tales
Size: 16 Mbits
Release Date: Available now

Sony Imagesoft and Disney paired up on *Mickey Mania*, giving developers full access to the immense resources of the animation giant. New drawings from Disney help to make Mickey's fluid movement just as good, if not better, than Aladdin's. Each level is based on a classic Mickey cartoon. The game starts with Mickey's first appearance in the black & white *Steamboat Willie*, then features classics like *Mickey and The Beanstalk* and *The Band Concert* (if you find the secret area). Ingenious action like Mickey carefully risking a potion while being attacked from every side, makes it hard to put down.
Rating: ★★★★

Vacuum head sucks up all in *Dynamite Headdy's* way, one example of the incredibly rich and original gameplay

NHL '95

Publisher: EA
Developer: High Score
Size: 16 Mbits
Release Date: Available now

Arguably the best sports series to grace a game system, EA's *NHL* series continues with *NHL '95* with several significant changes. Now it's possible to create your own players, play a full NHL season (complete with injuries, but no strikes), and even make trades. There are full rosters of all NHL teams, real players — you "are," temporarily at least, Gretsky and Lemieux — and up to four people can play. The only thing missing is the perennially-popular fighting (evidently the NHL thought it was bad for their image), though the players are bigger, faster, and the goalies are tougher.

EA shoots and scores again with the best NHL action anywhere, and possibly the only NHL action anywhere.
Rating: ★★★★

Shaq Fu

Publisher: Electronic Arts
Developer: Delphine
Size: 24 Mbits
Release Date: Available now

EA places Shaquille O'Neal's unique persona in a smoothly-animated fighting game. The 24Mbit genesis cart boasts of four more characters and backgrounds than the 16Mbit SNES, bringing the total of each to 12. Delphine — the developers of *Flashback* — wanted to produce the smoothest animated fighting game possible, and succeeded: the characters in *Shaq Fu*, rotoscoped from live actors, gives the final animation twice the number of frames per move as in SSFII. The moves are pleasing to watch, but hellish to use. After each move, you have to wait for all the animation to end before executing the next move.

Shaq Fu includes everything a good fighting game needs, with the exception of good fighting.
Rating: ★★

tough game. There are bizarre and heinous monsters (a giant dancing weinerdog, an oversized baby head, etc.) punctuating each monstrous level.

Unlike most games, no two levels or bosses look alike. Most importantly, *Dynamite Headdy* is loaded with good old-fashioned fun, and that's what gaming is all about. Isn't it?
Rating: ★★★★

SNES

APING MARIO?

Donkey Kong Country

Publisher: Nintendo
Developer: Rare Ltd.
Size: 32 Mbits
Release Date: Available now

Rare Ltd., the company behind Nintendo's first Ultra 64 titles, offers the first-ever, completely rendered 16bit game: *Donkey Kong Country*.

First, the obvious. Rendered characters and the superior color palette of the Super NES give *DKC* the best graphics ever seen on a console game. Surprisingly, Nintendo still could've done more — in many cases the game skips a few shades and actually uses a little dithering to save memory space.

The game is an excellent example of what the Super NES can really do, but it unfortunately sets a benchmark no one else is likely to meet. Who but Nintendo can afford this expensive 32Mbit cart? Even so, one can expect Nintendo to continue its "big cart" trend to periodically spank 16bit sales long after the next generation of consoles hit late next year.

After all the hype, *DKC* really is an amazing cart. However, the gameplay falls a hair short of the typical Nintendo blockbuster. Although it's no *Mario* or *Zelda*, the game plays well with plenty of hidden items and secret rooms to keep even the most dedicated players busy for some time to come.
Rating: ★★★★

Old and new characters are introduced throughout the game. Here's Kong and Diddy monkeying around (below)

Bananas are hard currency in the land of the Kongs (above)

Barrels — if for no other reason than for tradition — play a central role in the proceedings, be they thrown or rode on

Samurai Shodown

Publisher: TAKARA
Developer: SNK
Format: 24 Mbits
Release Date: Available now

This cult arcade hit, originally made for the prohibitively expensive Neo-Geo, has knifed its way to the 16bit market. Each of the 11 characters (one below the original 12) has a sword of some kind, from sizable scimitars to razor-sharp rapiers. There's the usual jumping, punching, and loads of tough to pull-off special moves. It's even possible to lock swords and disarm your worthy opponent. Other than that, *Samurai Shodown* doesn't do much to justify its use of 24 Mbits. The graphics don't match up with the champs (SSF II and MKII), and the zooming in and out, popular in the arcade version, didn't make the cut.

However, fans of the arcade game won't be disappointed with this solid translation, complete with blood and all the varied endings of the original.
Rating: ★★★

Urban Strike

Publisher: Electronic Arts
Developer: The Edge
Format: 16 Mbits
Release Date: Available now

The jungle and desert have been saved, so now it's on to the cities in *Urban Strike*. The game plays just like the earlier versions, but the unique battlegrounds make this game fly. There are chances to blow up US cities — Las Vegas, San Francisco (but why not Cleveland?) — and take off by foot, chopper, and tank through eight levels and 95 varied missions (running through casinos, saving Elvis, etc.). Flying through the neon lights of Vegas at night is breathtaking. Fog-covered San Francisco is complete with recognizable areas like the Golden Gate Bridge, Transamerica building, and the South of Market district — a place we've been bombed many times before (*That'll be an 'in' San Francisco joke — Ed.*). With all the great scenery, *Urban Strike* should be the best *Strike* game yet,but there's nothing new in the gameplay department, which is a shame.
Rating: ★★★

SNES

The Adventures of Batman & Robin

Publisher: Konami
Developer: Konami
Size: 16 Mbits
Release Date: Available now

Even though one can't choose to be Robin (as the title suggests) this standard platform game is a faithful translation of the hit TV show. The character and background graphics are true to the cartoon, and practically every character to appear on the show is included. Unfortunately, the game's diverse play is flawed by a slow-moving character that can make it difficult to pull off quick

B&R's graphics and animation are very true to the top-rated cartoon

jumps or attacks. In addition, the wildly varying difficulty levels often leave the game way too easy or frustratingly hard.
Rating: ★★★

The Lion King

Publisher: Virgin
Developer: Westwood
Size: 24 Mbits
Release Date: Available now

Virgin's Digicell animation technique is capable of producing brilliant graphics, but it's a gimmick that's been beaten to

Virgin's Lion King not only looks great, but plays great too. Young children will simply love it

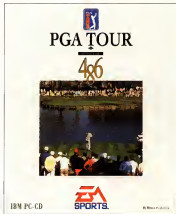# All the biggest names in golf. Including yours.
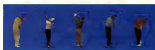
The Swings: Each pro was filmed then digitized into the game. Drives, fairway irons, chips, sandblasts and putts are seamlessly overlayed onto majestic TPC courses.

The Pros: Go head to head against them, or step into the shoes of 9 different featured pros. Listen to their tips. Learn about their greatest moments.

The 486 Technology: The new Target Arc™ System enables you to visualize your shot and control ball spin before you swing. A snap-around view, multiple camera angles, multimedia video, digitized speech, and a quick redraw rate combine to make the most realistic golf simulation ever.

The Formats: The ultimate challenge is tournament play. But stroke, match, and Skins are options.

The Courses: Play the most diverse and challenging of the famous TPC courses: Sawgrass, Summerlin and River Highlands. Constructed from the actual blueprints, the courses are so real that players can actually feel the different course personalities.

PGA TOUR 486

IBM PC-CD

You're paired with Stadler, trying to catch Kite on the back 9 of Sawgrass. First you made the cut. Now you're in the money and have a shot at a PGA TOUR® victory. PGA TOUR® Golf 486 has the pros, the pressure, the courses, the yips.

EA SPORTS
It's in the game.™

death by Aladdin copycats. To set itself apart from the pack once again, the company has worked its magic on gameplay.

Each level holds unique elements, like the split-second jumps in the Elephant Graveyard, or riding the waterfalls in the "Hakuna Matatta" stage. Control is also excellent, and even though the game is much harder than Aladdin, it's never unfair or frustrating. After topping its own industry-setting Aladdin, where can Virgin go from here? Maybe Disney's next film, Pocahontas, has the answer...

Rating: ★★★★★

Mortal Kombat II

Publisher: Acclaim
Developer: Sculptured Software
Size: 24 Mbits
Release Date: Available now

The once "child-safe" Nintendo actually called up Acclaim to ensure an equally bloody version of MKII. As a result, this is the first Nintendo game ever to carry a content rating on its box. This SNES version is unquestionably better than the Genesis cart in every way. The graphics are

Wholesome fun for the family? Safely behind a wing, Mortal Kombat 2 sticks a finger to Senator Lieberman

ncher, the sound is deeper, and the control is smoother. Almost every secret trick has been ported over as well, with at least 10 more codes added just for this version. With full creative license, Acclaim has produced possibly the best arcade conversion ever.

Rating: ★★★★★

NBA Live '95

Publisher: Electronic Arts
Developer: Electronic Arts
Size: 16 Mbits
Release Date: Available now

Last year EA dropped the "Bulls vs. whomever" heading, and

changed the game completely for this '95 release. An new engine features smoother, faster players and a new, off-basket perspective. Every official rule is now included, and the NBA team and players' licenses are again used. Shooting has a much better feel, there's a turbo speed feature (similar to the one in NBA Jam), and some neat finishing touches, like random stats after scoring and taunting after a dunk. Live '95 emerges as the best basketball sim' available.

Rating: ★★★★★

Pitfall: The Mayan Adventures

Publisher: Activision
Developer: Red Line
Size: 16 Mbits
Release Date: Available now

While most would be hesitant to admit it, the Atari 2600 has kept many in thrall for hours at a time, holding its players glued to the screen despite stone-age visuals and sound. Now, one of the most addictive, ancient-platform games ever has returned from the grave to take on the legacy of platform-jumping games it helped to create. Activision's Pitfall: The Mayan Adventures introduces Pitfall Harry, and his son Harry Jr., to a whole new generation of gamers. But while Pitfall may have made leaps and bounds from its original format, today's jaded players will find it hasn't come far enough to stand out in today's 16bit market. Run of the mill graphics and sound combined with gameplay that is, at best, tedious and unraspred, leave Pitfall interesting as a novelty, but not much else.

Rating: ★★

X-Men: Mutant Apocalypse

Publisher: Capcom
Developer: Capcom of Japan
Size: 16 Mbits
Release Date: Available now

The plot is classic X-Men fare: Professor X calls his mutant heroes together to infiltrate Genosha island and free captive

Capcom's X-Men hits much closer to the mark than Sega's previous Genesis offering. Capcom's fingerprints are all over the control mechanism, also, so Street Fighter 2 players can swagger straight into the action

mutants. You must complete the first five missions (one for each character) to receive a password. There's a great learning curve early on, but once you've passed the first set of missions, the rest of the game flies. Attacks are performed with Street Fighter-like button combinations, giving the Final Fight-ish action a much needed twist. While it would've been nice to have seen more X-people, this game plays great. Nothing revolutionary, but fun.

Rating: ★★★

ARCADE

Ace Driver

Distributor: Namco
Developer: Namco
Format: Multi-player Sitdown
Release Date: Available now

Along with Ridge Racer 2, Namco has released another eight-player racer aimed at Formula racing fans. Armed with traditional texture-mapped polygons with which today's arcades are becoming so familiar, Ace Driver also provides players with a choice of two different views and three different skill levels. Although it looks silly at first, the side-to-side movement seat creates a realistic sensation of turns and fishtails giving the game a slight edge over Ridge Racer 2 in a final comparison. It may not be the best all-around racing title out today, but for competitive multi-player action, Ace Driver holds the title.

Rating: ★★★★

Cruis'n USA

Distributor: Midway
Developer: TV Games INC.
Format: Motion simulating sit-down/standard sit-down/one-player stand-up
Release Date: Available now

After the confined loops of Daytona USA and Ridge Racer, Midway/Nintendo head back to the open road in Cruis'n USA for coast-to-coast racing. Two things to remember: 1) this game is (new word, folks) 'home-perfect.' Supposedly (and there is some doubt) based on Ultra 64 hardware, this is exactly the same game you'll play at home in fall '95 (Sony and Sega only promise watered-down versions of their flagship racers); 2) with 14 varied stages, eight cars (including a school bus and squad car, if you know the ideal), and multiple start points, Cruis'n offers real long-term play outside the arcades.

While less graphically impressive than its rivals, Cruis'n USA is the OutRun sequel Sega should have done, and is our pick for the driving crown.

Rating: ★★★★★

Ace Driver's night-way games (as pioneered by Sega) make for a terrific sense of competition

Primal Rage

Publisher: Atari
Developer: Atari
Format: Stand-up two-player
Release Date: Available now

There's always the need for a hook to make one fighting game stand out from every other kick-and-bleed title in the arcades. And from a strict marketing point of view, Primal Rage should be the greatest crowd-pleaser ever made — Jurassic Park succeeded in turning us into a nation of dinosaur lovers. But after wowing at the dinosaurs, the ultra-bloody fatalities, the high-profile vomiting and flatulation attacks, Primal Rage really doesn't have the play to back up its monster attitude. The accelerated game speed leaves most matches nothing more than a contest of who can hit their buttons fastest. And while Primal's excellent selection of special moves remedies this flaw to some degree, most skilled players will probably be frustrated at how well a 'newbie' who just repeatedly mashes a button can do against experienced players. All in all, an excellent show of graphics and sound design tarnished by unbalanced gameplay.
Rating: ★★★

Ridge Racer 2

Distributor: Namco
Developer: Namco
Format: Sitting one and two-player units
Release Date: Available now

Not exactly a sequel, Namco's Ridge Racer 2 adds a couple of features missing from the original, and tweaks the graphics so the cars now integrate seamlessly

with the backgrounds. Rearview mirrors can now help prevent opponents from passing, and more importantly, eight-user, multiplayer link-up has been added to enable Ridge Racer 2 to compete on equal footing with Sega's Daytona and Namco's new Ace Driver. Also new is a drafting effect that adds realism to the competitive play.

Despite early rumors to the contrary, Sony's PlayStation translation of the original is coming along right on schedule, but will not feature any of RR2's extras.
Rating: ★★★★

Virtua Cop

Publisher: Sega
Developer: Sega
Format: Two-player standup with light gum
Release Date: Available now

Virtua Cop, a light gun shoot 'em' up that looks more like a high-tech sequel to Konami's Lethal Enforcers than an all new release, shows the dangers of recklessly applying new technology to games that don't need it. Although 3D opponents add much needed depth (literally) to the title, the other benefits of Sega's AM-2 engine (such as 300,000 polygon-per-second animation, and texture-mapped images) were never used in a way that really improved gameplay. If players were given a chance to freely explore their mapped-out environments, this game would be a winner, but as it is, Virtua Cop is just an old game with a new gimmick.
Rating: ★★★

Arcade

Each character's intro screen truly shows off the game's incredibly rendered graphics

For the first time in a Nintendo-backed game, players can kill one another in a brutal, bloody fashion

In some levels, such as this rooftop scene, the game camera zooms in and out creating a cool 3D effect

COMMERCIAL

Killer Instinct

Publisher: Midway
Developer: Rare Ltd.
Format: Two-player standup
Release Date: Available now

Here we see Williams/Nintendo attempting to place just one more Jack of Spades on top of an arcade fighting game house of cards that's in danger of imminent collapse. Soon gamers will demand something truly new, but for the moment it would seem that Killer Instinct will get us excited for a fight game just one more time...

Developed by Rare — the latest designers to sit at the right-hand of Nintendo — Killer Instinct has all of the technological muscle needed to excite (namely: better/bloodier visuals). Taking controls from Street Fighter II, finishing moves and blood from Mortal Kombat II, and even a few backgrounds from Virtua Fighter, Killer Instinct seeks to embody all the best elements of what's gone before. It doesn't build (check out the cinematics of the bridge fight), in places it even cheats (Spinal's 23-hit "Super Combo" is, in truth, only one special move). But add to the illusion some of the most impressive renders to ever hit the video screen and an arcade-shaking DCS sound system and there's no doubt that Killer Instinct is at the top of the heap.

So it's not the breakthrough title we're all waiting for — and sooner a new genre has to explode. But for the moment at least, Nintendo's plans for Ultra 64 seem to be progressing smoothly.
Rating: ★★★★

Ridge Racer 2 adds little to the original. There's a multi-player option, a new color palette and a new player view. Namco's real effort went on Ace Driver

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corresponding

Go on. Do the 'write thing': **NEXT Generation** letters, 1350 Old Bayshore Highway, Suite 210, Burlingame, CA 94010. Or E-mail us at: ngonline@aol.com. We cannot reply personally to all correspondence, but everything is R&R'd (read and recycled).

Letters

We talk a lot of interaction. Here's where we deliver...

Catch 22 ensures that all premiere issues are accompanied by a disappointingly skinny mailbag: No one is able to write until the mailing address has been printed — and then it's too late. We look forward to your contributions next month, in the meanwhile here's some of the correspondence we've had over the last couple of months...

G reat news. I love reading EDGE and I'm sure that **NEXT Generation** will be even more interesting. We've been saying "Welcome to the Next Level" for a while now and I hope **NEXT Generation** will be just that.

Tom Kalinske
Sega Of America, CEO

Thanks Tom. A bit of explanation is required here. EDGE is a sister publication of **NEXT Generation**. Launched in the UK just over a year ago, EDGE has achieved spectacular success on the other side of the Atlantic, even winning the European Leisure Software Publisher Association's "Magazine Of The Year" award for 1993. **NEXT Generation** will cooperate with EDGE in sharing information.

So with EDGE providing us with European news, our own dedicated newshounds based in Tokyo and our own HQ located in California's Silicon Valley, **NEXT Generation** can provide you with a truly global perspective.

T he launch of **NEXT Generation** is great news. Everyone here at Capcom fights over the few copies of EDGE that we get. **NEXT Generation** is sure to be a winner.

Joe Morici
Capcom, Vice President Marketing

O n behalf of Philips Media Games, I'd like to welcome **NEXT Generation** to the United States. EDGE, your sister publication in the UK, is known for its high quality design, thought provoking features, and previews and reviews of the best the game industry has to offer.

I'm sure that the **NEXT Generation** staff is well on its way to creating a magazine for American gamers that lives up to EDGE's reputation. We at Philips Media Games are looking forward to sharing our games with your staff, and most importantly of course, with your readers.

Welcome again and Happy Gaming!

Chris Dudas
Promotions Manager
Philips Media Gaming

I would like to congratulate GP Publications on its new magazine **NEXT Generation**. I'm excited to see a publication with the look and feel of EDGE dedicated to the US market.

Finally, a grown-up videogame magazine for next generation gamers! Welcome! I look forward to seeing the first copy of what I am certain will be an impressive magazine.

Thanks again for making it easier for me to say "go buy your own copy" to everyone at Sega. Best regards,

Tim Dunley
Product Manager
New Product Group
Sega of America

A t the 3DO Company, we have thoroughly enjoyed the comprehensive and insightful coverage of the videogame industry by your UK sister publication, EDGE—it's clearly a leader in its class. We thank you for your coverage of 3DO and look forward to the same level of quality reporting in the United States with **NEXT Generation.**

Congratulations on your American debut, and best of luck in your pursuit of the exciting and unfolding future of interactive entertainment! Sincerely,

Janet Strauss
Director of Marketing
The 3DO Company

W elcome to the jungle! Congratulations on your debut into the videogame industry. This is an exhilarating time for all of us as we enter the true hi-tech future of video gameplay. Best regards,

George Harrison
Director of Marketing
Nintendo of America

C ongratulations, the launch of **NEXT Generation** will be good for the gaming industry in America.

Brian Fargo
Founder and CEO
Interplay

G ood luck on your "Edgey" new mag!

Dave Perry & The Earthworm Jim Team
Shiny Entertainment

C ongratulations on your new magazine, from all of us here at Domark. **NEXT Generation** promises to keep its finger on the pulse of new gaming technology, and become an essential monthly read for all of us in the gaming industry. EDGE is the one magazine that everyone fights over, and we are sure **NEXT Generation** will demand the same attention.

John Kavanagh
Vice President Development
Domark

OK, so that's enough self-promotion. And **NEXT Generation** is as much

for the gamers on the street as it is for those working in the gaming industry. So we want letters from gamers of all ages and experiences — as long as you've got something interesting to say. Here are a few questions we received on an impromptu **NEXT Generation** "working visit" to our local arcade...

H ow much will **NEXT Generation** concentrate on what's happening in countries outside of the United States?

Chris Sulas
Cupertino, CA

Our main focus is always on the games and systems available to gamers in the US. However, there are times when Europe and Japan lead the way (the launch of Saturn and PlayStation, for example) and in these cases we will print news from abroad as it paints an accurate picture of what will soon be happening back home.

W ill **NEXT Generation** print game strategy guides?

John Summers
San Jose, CA

No. **NEXT Generation** is all about news. News of new games, new systems, new debates raging in the game development community and new stories. We don't do tips.

ng

Mailshot

Want to get something off your chest in ten words or less? Want to send an anonymous message of respect/abuse to the programmers of your last software purchase? **Mail shot** the interactive entertainment industry! Post it here, usual address.

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- **Junior Software Engineer**
- **3D Modeler/Animator**
- **Software Engineer/ Graphics**
- **Senior Artist**
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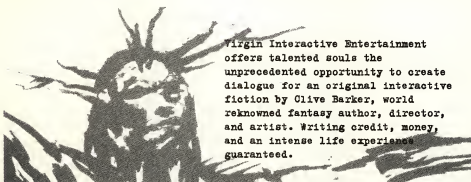
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Joyriding!

Gaming on the information superhighway

Internet gaming is possibly the fastest
growing sector of interactive entertainment.
Next month, NEXT Generation logs on for the
definitive guide to what many industry pundits
believe will be the future of gaming.

Also...

Mr Shigeru Miyamoto — the creator of
Mario and Donkey Kong Country — talks
exclusively with NEXT Generation in Japan.

Saturn launched! Live from Tokyo,
NEXT Generation covers the hype, the
hardware and the games surrounding Sega's
most ambitious project yet.

NEXT Generation #2
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Donkey Kong Country.
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NEXT

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